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## Original Articles

### THE SURGICAL TREATMENT OF ACUTE OTITIS MEDIA*

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It is not my purpose to endeavor to tell you anything particularly new about this subject, nor anything of which you are not already aware. It is my purpose, however, to impress upon you the necessity of early surgical treatment in such cases of otitis media as need it, and the necessity of an early and thorough examination of the ear affected, in order that the advisability of such treatment may be early determined. It is a well known fact that the vast majority of chronic ear troubles are the results of some nose or throat trouble, causing acute otitis media which has been neglected. A brief review of the anatomy of the parts concerned may be of advantage in refreshing the memory regarding the location and intercommunication of the structures usually affected in this disease.

The middle ear cavity lies at the internal end of the external auditory canal, from which it is separated by the drum membrane. The cavity is flattened transversely. In size it is 5/12 of an inch, before backward, ¼ inch perpendicularly, and ¼ inch transversely, and its walls are composed of unyielding bony structures, with the exception of the outer wall, which is composed of the drum membrane as before mentioned. The cavity is lined with mucous membrane, and contains the hammer, anvil and stirrup, a chain of ossicles lying between the drum membrane and the oval opening in the bony wall of the internal ear, being placed in the order in which they are mentioned from without inwards. The mucous membrane of the middle ear cavity is continuous with the mucous membrane of the nose and throat through the medium of the tympano-pharyngeal tube which extends from the middle ear cavity to the naso-pharynx. This tube is about two inches long, with a diameter of about 2 m.m. at its middle ear orifice, and enlarging to a diameter of about 4 or 5 m.m. at the naso-pharyngeal orifice. Its walls are partly of bone, partly of cartilage and fibrous tissue. The naso-pharyngeal orifice protrudes somewhat from the naso-pharyngeal wall and resembles the expanded end of a trumpet. The bony wall of the middle ear is very thin above the cavity, usually about 1 m. m. in thickness, or less. Above this lies

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the interior of the skull. At the upper and posterior side of the middle ear cavity is an opening varying in size, which leads to the largest mastoid cell, which is called the antrum of the mastoid. This passage is called the "ad-antrum" or the "ad-additis," meaning simply "to the antrum," or "to the attic," corresponding to the end from which it is viewed. That portion of the middle ear cavity into which this passage opens from the antrum is called the attic. Adjoining the mastoid antrum and at times intercommunicating with it, are a large number of other cells, lined with mucous membrane, and making up the spongy tissue of the mastoid bone. The usual beginning of an otitis media is some inflammatory condition of the nose or throat extending to the naso-pharynx, and from there by way of the tympano-pharyngeal tube to the middle ear cavity. The mucous membrane of the tympano-pharyngeal tube is covered with ciliated epithelium, which has a waving movement towards the naso-pharynx. This is the only direction in which the middle ear cavity is normally drained. The tympano-pharyngeal tube is also the only passage by which the middle ear cavity is ventilated and supplied with air pressure so that this pressure may be the same on the inside of the ear as it is on the outside. If for any cause the drainage or free aeration of the middle ear cavity is obstructed, we have one of two things, or both of them, occurring as a consequence. If ventilation is prevented, there is formed a partial vacuum, with increased resistance to external air pressure. If the tube is so obstructed as to prevent free drainage, there will occur accumulation of the mucus in the middle ear cavity. This accumulation being more or less, and of different composition, according to the nature of the conditions causing it, whether or not it be merely an edema with exudation, or a true inflammation with germ infection and pus. It may be readily seen that any inflammatory condition of the naso-pharynx is very likely to cause inflammation of the lining membrane of the tympano-pharyngeal tube. This inflammation in the tube causes an excess of the mucous flow, and swelling which closes the tube and obstructs the drainage. The position of the tympano-pharyngeal tube is somewhat different at different ages. In the infant the internal opening is about on a level with the opening into the middle ear cavity. As age increases the position of the tube changes gradually, until in the adult the naso-pharyngeal opening is about one-half to three-quarters of an inch lower than the opening in the middle ear cavity. Thus we see that the drainage through this tube from the middle ear cavity in infants and children has not the advantage of promotion by gravity that it has in adults.

The causes of acute otitis media are varied. As this paper has to do with the surgical treatment of the trouble, it is not my purpose to enter extensively into discussions of the etiology. Suffice it to say that any inflammation or infection of the nasopharynx or obstruction of the eustachian tube by adenoids or any other trouble may cause it. The germ of infection mostly found in discharges from the middle ear cavity following an acute otitis media are the pneumococcus, bacillus of influenza, staphylococcus, streptococcus and occasionally others of the generally known bacteria, even including the bacillus coli communis. The bacillus of tuberculosis is also found in some instances. These germs may have gained access to the middle ear cavity through a perforation in the drum membrane. This perforation may occur through external violence or spontaneous ruptures, or through perforation done without antiseptic precaution, or on account of uncleanliness of treatment following perforation. Tu-

berculous infection in the middle ear cavity has often been considered primary, and indeed it has been advanced that tuberculous infection of other parts of the body does at times occur as the sequence of primary middle ear infection. Tuberculous infection, however, is not usually accompanied by pain, or the acuteness of other infections. Many times the first evidence of a tuberculous middle ear infection is a perforation of the drum membrane and discharge following. Otitis media, following scarlet fever, measles, typhoid and other fevers often appear to be not caused by extension of the infection from the throat through the tympano-pharyngeal tube; it appears to be at times metastatic, or even simultaneous with the eruption in throat.

The first symptom of an acute otitis media is usually pain. In some cases where the condition appears to be caused by merely an excessive formation of mucus in the middle ear cavity, the first symptom complained of by the patient is a crackling sound in the ear and deafness. In the vast majority of cases, however, pain is the main symptom, and in the severer types the pain is very excruciating and may early become so. The character of the pain is said to resemble that of orchitis. About the only affections this needs to be differentiated from are neuralgia and myringitis. The fixed location of the pain and the appearance of the ear drum usually make a differentiation clear. In neuralgia the pain may usually be traced to other parts of the head, or side of the face, along the course of a nerve. Neuralgic pains are also usually more or less migratory. In inflammation of the ear drum, an inspection of the membrane will usually show a streak of red along the line of attachment of the handle of the malleus. Later appear a few streaks of red throughout the drum membrane, and a red circle about it, close to its attachment to the external auditory canal. There is no bulging of the drum membrane nor any displacement of the land marks. Deafness is not a prominent symptom in myringitis. The patient complains usually of the contrary, that is that he can not bear the loud noises, that noise of any kind, even at times the sound of his own voice, causes pain. In acute otitis media, however, there is usually a bulging of the membrane, due to the pressure of the accumulation within the middle ear cavity. The drum membrane is usually of a diffuse deep redness. If seen earlier, the bulging or the diffuse redness may not be present. If it is not, it will soon appear. The appearance at first may resemble myringitis. The acuteness of hearing will, however, be lessened in otitis media. In the exudative type, the surgeon may be able to see the accumulation in the middle ear cavity lying against the drum membrane. This appears as a deep gray or yellowish patch, level across the top and changing its position with the changing of the position of the patient, though always at the lowest part of the cavity. This may not be accompanied by pain, if of the exudative type, but will be accompanied by deafness and crackling noises. If seen in the later stages, acute otitis media may present a deep red membrane bulging either below or at the attic and sometimes pulsating. If late enough so that ulceration of the inner wall of the drum membrane has occurred approaching perforation, there may be discovered at this point a yellow or redish yellow spot. If accumulation has been long pent up, or is caused by virulent infection, tenderness of the mastoid bone will be noticed upon deep external pressure over the region of the mastoid antrum.

The progress of acute otitis media may certainly be influenced by the administration of internal remedies. Surgical treatment, however, is nearly al-

ways early indicated, and its employment produces most satisfactory and quickest results. Relief of tension and promotion of drainage, are the two principal points to be most desired. Heat applied externally relieves the pain to some extent in nearly all cases. In all cases some depleting antiseptic solution should be instilled into the external auditory canal. For this purpose a mixture of phenol in glycerine and absolute alcohol is one of the very best. A formula which I use for this mixture is: phenol, pure crystals, forty grains; absolute alcohol, two drams; glycerine, one ounce. It is difficult to get a druggist to put this mixture up correctly as the formula is written. Unless you stand right over him and insist upon the use of the pure phenol crystal, he will use the solution which contains a little water. Water destroys the hygroscopic property of the mixture and ruins it as far as its depleting action is concerned. A low percentage alcohol will do the same thing. This solution is very strong in phenol, but the addition of the absolute alcohol neutralizes the escharotic action. Attention must be paid to the nose and throat. Alkaline antiseptic sprays and douches may be used to advantage. After the nose and naso-pharynx are thoroughly cleansed, inflation of the tympano-pharyngeal tube may be done. The method used for this may be that of Valsalva, or Politzer or by the catheter. Catheterization is much to be preferred. By its use there is less danger of forcing anything from the naso-pharynx into the tube and middle ear cavity. It also has the advantage of directing all of the air pressure force against the one ear for which it is intended.

By using the nebulizer in connection with catheterization, medicines in the form of oily vapors may be thrown directly into the middle ear cavity. By thus opening the tympano-pharyngeal tube and using external measures to reduce congestion, as counter-irritation or artificial leach behind or in front of the ear, sometimes an acute otitis media may be stopped in its early stage. A nasal douche of a mild alkaline antiseptic solution used copiously is quite an aid in the reduction of the congestion of the naso-pharynx and the cleansing of these membranes. Nasal douches are often given incorrectly. The small glass receptacles known as hand douches, and by the use of which the patient has to throw the head backwards, and introduce a small quantity of water into the nose, and then throw the head forward and expel it, are not only inefficient, but are sometimes positively harmful. By filling the nose and naso-pharynx with a watery solution, and having the head thrown backwards, the solution is very apt to get into the tympano-pharyngeal tube and possibly into the middle ear cavity. This places more fluid into the cavity which we are trying to drain. The watery solutions thus introduced nearly always cause troublesome irritations. The proper way to give the nasal douche is as follows: Use a fountain syringe bag and tube, or a douche can, or any such apparatus by which the flow of the solution is caused by gravity, the pressure of which may be regulated by raising or lowering the receptacle containing the solution. The tip should be one which will enter the nostril a little distance and then close the nostril opening by shoulder expansion of the tip. The patient should lean the head well forward over a basin or bowl, keep the mouth wide open and breathe through the mouth only. Patient should be instructed to not swallow while using the douche. The nasal tip is then inserted into one nostril and the flow released, the solution will then pass up one nostril cross over through the naso-pharynx, and flow out through the outer side of the nose. At least a

quart of the solution should be used. One-half should pass through the nose in one direction, then the tip should be changed to the other side, and the other half of the solution be allowed to pass through in the other direction. The solution should be as warm as can be comfortably borne. At times it may be necessary to apply adrenalin solution, with or without cocaine to the interior of the nose in order to reduce congestion of the turbinates, enough to allow the passage of the douche. All of these measures of which I have spoken are aids in the treatment. As soon, however, as it can be determined that pus formation has occurred in the middle ear cavity, or even that the cavity is filled by pent up mucus without infection, the drum membrane should be opened freely. It is bad practice to wait until the pressure or ulceration shall of itself force an opening through the ear drum. If the drum membrane is opened by the surgeon it affords many advantages over later spontaneous rupture. In the first place the surgeon can carefully cleanse the external auditory canal and make the incision under antiseptic precaution, as far as the external ear is concerned. He can open the membrane at a point of selection where it will least interfere with the subsequent functioning of the conductive apparatus. The wound made is clean cut, with healthy edges and will usually heal readily after the discharge has ceased, leaving a scar which interferes very little with the function of the drum membrane. Again in early incision the contents of the cavity are evacuated before very much ulceration of the mucous membrane lining the cavity and covering the ossicles has occurred. This is a great advantage and shortens the discharging period and prevents chronic involvement. It also prevents to a great extent mastoid involvement. When a case is left for perforation to occur spontaneously, the site of the perforation is liable to be anywhere. It is always preceeded by ulceration at the perforating spot, which may be close to the malleus and may cause ulceration of that bone covering at the same time. When perforation does occur the edges of the opening are ragged and of broken down ulcerated tissue.

Sometimes a piece of the membrane, itself, will be destroyed, and at times so large that the process of repair following will not close the perforation. The point of selection for incision of the drum membrane, is, all things being equal, the posterior inferior quadrant, and close to the wall of the external auditory canal. At times, however, it is advisable to select some other point, especially if the accumulation appears to be localized in some one portion of the cavity. There are times when the accumulation in the middle ear cavity will be almost entirely confined to the attic. If such is the case the membrana flaccida, or the loose portion of the drum membrane in front of the attic will be seen to be bulging and tense. If such is the case it is some times better to make the incision there. Then by having patient lie down upon the affected side, the drainage will usually be satisfactory. The incision which the surgeon makes in the drum membrane should be acutely curved or "V" shape, in order to form a flap opening so that drainage will be unobstructed. The author has long been dissatisfied with the usual instruments used for paracentesis of the tympanic membrane. The method of using the paracentesis spear point needle is unsatisfactory. The flat spear point perforates the membrane and is withdrawn, and the edges of the perforation so made immediately close together, and very little drainage is established. Ordinarily the use of a small curved knife is also unsatisfactory. To make a sufficient incision with the ordinary para-

centesis knife requires five distinct movements to make and complete the incision,

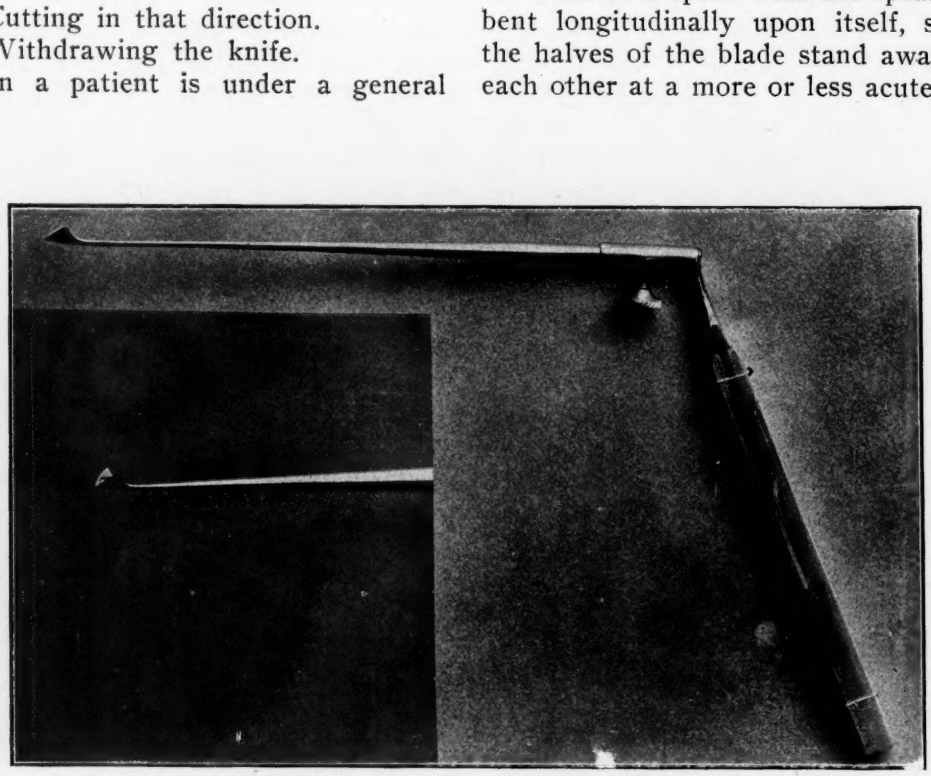
1. Pushing the knife through the membrane.
2. Cutting in a certain direction.
3. Turning cutting edge of knife in a different direction.
4. Cutting in that direction.
5. Withdrawing the knife.

When a patient is under a general anesthetic, this operation with its several movements can be satisfactorily performed.

When the patient is not under general anesthesa this incision can very seldom be satisfactorily completed. The patient will jerk away before the incision is finished. The author has designed a myringitome which combines the desirable features of both the paracentesis spear and the paracentesis knife. It can be quickly used, and yet supplies the "V" incision which is desired for drainage.

The new instrument which I have devised can be used as quickly as the spear head needle, and yet gives the "V" shape incision result. This knife has the form of a spear with the spear blade bent longitudinally upon itself, so that the halves of the blade stand away from each other at a more or less acute angle. This makes a spear head with a sharp point and the sharp edges of the blade rising and diverging from each other as they are traced towards the handle of the instrument. The long shank is fashioned so as to be used with the universal handle of the middle ear set. In this way the point of the "V" may be turned in any direction desired.

Heat applied to the external ear usually affords relief from pain. If viru-



**Measurements of Myringitome.**

Blade three m. m. high from apex of V. to t he highest point of the cutting edgs. Four m. m. long from the point of the instrument extending along the V. point to the place immediately below the highest point of the cutting edge. The blades should be two and one-half m. m. apart at their highest point of divergence, and the tip of the blades at their highest point of divergence should be blunt and oval or rounded.

lent infection exists, however, with involvement of the mastoid, ice applied over the region of the mastoid in the early stage of such involvement is preferable. After free drainage of the middle ear cavity is established, attention must be given to keeping it so until all discharge shall have ceased. The external auditory canal must be kept as clean and aseptic as possible. There are two methods of accomplishing this. The dry and the wet. The dry method consists of promoting drainage by strips of absorbent gauze passed into the canal and up to the drum membrane. These strips must be changed frequently, so that the discharge will be removed as fast as it presents itself. The other method is by use of antiseptic douches into the external auditory canal. The dry method is to be preferred if the patient is under the close supervision of the surgeon or a competent nurse. If the patient can not have the close supervision, the wet method is probably preferable.

## THE TREATMENT OF EXOPHTHALMIC GOITRE*

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While the pathology of a disease is not positively determined, we find that the treatment of such disease differs according to the various theories regarding its origin, or the processes concerned in the production of its symptoms. The treatment of exophthalmic goitre is no exception to this rule.

At present there are numerous theories regarding the pathology of exophthalmic goitre, but the definite primary lesion, if there be one, has not yet been discovered.

The course of the disease is progressive in all but a few cases and unless treatment is resorted to, may be of fatal termination or, what is as serious, lead to mental derangement, and still later to death. This necessitates intervention.

Although the treatment is still empirical success has attended many methods, this success often being only the amelioration of the symptoms, but again, the permanent cure of the disorder.

Briefly reviewing the various theories of the pathology of this disorder we find three, or perhaps four, of them claiming attention. The first is, that the disorder is a toxemia due to disturbances in the digestive processes, a lack of oxidation in the organism generally being the starting point of the disturbances of the thyroid.

A second view is that exophthalmic goitre is due to a hypersecretion of the thyroid gland, and closely allied to this is another theory, that the secretion of the gland is perverted, the exciting causes of this hypersecretion or perversion of secretion not being recognized.

Still another theory is that the disorder is primarily a neurosis; that there is a disturbance in the relations between the sympathetic nervous system, the pituitary gland and the thyroid.

Evidence, experimental, pathological, to a slight extent, clinical and therapeutical is produced to support each view in

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turn; but still the point is not yet settled.

Pathologically, there are found constant lesions in the thyroid gland of its structure and contents, and the blood vessels of the gland are found enlarged, the capillaries being dilated and increased in number.

The lesions found in the sympathetic nervous system, and in the pneumogastric nerve and medulla oblongata are not constant lesions and are thought to be secondary. Some changes in the blood have also been observed, but, again, these may be secondary, though they are used to support the theory of a general toxemia.

From the pathological findings we are inclined to direct most of our attention to the thyroid gland itself; and clinically on the part of the thyroid we find in nearly every case an enlargement and increased vascularity.

This increased vascularity by many authorities is considered the chief factor in the production of the disease, and this forms the basis of the most successful methods of treatment, to date, whatever particular form it takes.

Whether the disease, originally, is a general toxemia or a disturbance of the nervous system, when we see the case for treatment we, undoubtedly, have an involvement of the thyroid gland, which, if not the primary cause of the symptoms of this disease, is, at least, a secondary factor, and at this stage, certainly, is rounding out the vicious circle.

A review of the literature to the present time on the subject of the treatment of exophthalmic goitre shows that in all methods, while the items of rest, diet, baths, massage, elimination, tonic, and nutritive medication are recognized equally, the decisive factor of the most successful methods has been that which influenced, by restricting, the vascularity of the thyroid gland.

For instance, one writer reports success by the use of heavy doses, long continued, of quinine which acts here beneficially through its "vaso-constricting" action. Others report success from surgical intervention which has for its object the decrease of the vascularity of the gland.

Surgical measures have been so brilliantly successful that one operator thinks exophthalmic goitre should be classified as a "surgical disease." However, this is not always a safe operation. It ought to be early in the course of the disease, as, later, changes in the blood vessels make it more dangerous than it is even naturally. And many patients refuse surgical intervention.

The non-surgical party advise operation only as a last resort when dyspnea threatens life.

Now, there is another agent which answers very definitely to this need of reducing the vascularity of the thyroid gland, acting locally and also through the nervous system on the walls of the dilated and enlarged vessels. This agent is the direct electric current which in addition to its action upon the walls of the vessels produces also a chemical effect in the gland structure itself, making for its better nutrition and hence more normal functioning.

This is no new nor strictly original treatment though the precise method is perhaps personal. For years electricity has been used in the treatment of this disease, but often without any definite idea of what was required, nor how to produce it with the current.

The usual statement in the textbooks is that "electricity may be used." The various modalities, the induced and direct currents, the alternating current, the sinusoidal current and X rays have all had a turn.

After many experiments the French physicians decided in favor of the direct current or a combination of direct and indirect currents, a galvano-faradic

treatment. They report much success with either method in cases where all usual measures had failed.

Personally, my choice is the direct current for its action as above indicated —a contracting of the walls of the blood vessels reducing thus the amount of blood in the thyroid, and its nutritive effect on the glandular tissues.

Now it is not enough to advise the use of the direct current. More definite details are necessary, for while the use of one polarity will give you good results, the use of the opposite will increase the conditions present.

So, as to method: The indifferent electrode, a flat metal one, measuring about three by four inches, is the cathode or negative pole; and this is placed upon the back of the neck. The active electrode is the anode or positive pole, and this, a small round one, two inches in diameter, is applied to the gland itself and to the vessels of the neck. After the electrodes, well covered and well moistened are in place the current strength should be gradually increased to 15-25 ma., if the patient can bear this intensity.

The treatment is an interrupted stabile one, i. e., the small electrode is held in one spot 3-4 minutes, then the current being diminished, the electrode is moved to another part of the gland again remaining stationary for 3-4 minutes while the current strength is gradually increased as before. The treatment should be 15 minutes long—7½ minutes to each side of the gland and across it, if all parts are affected. If only one wing is affected, 10 minutes will be sufficiently long for a treatment. Treatments should be given daily at first; and then every other day or later three times a week as long as the rapid pulse, enlarged thyroid and exophthalmos continue.

It will be necessary to treat the skin of the neck every night with cold cream to be able to give daily treatments as the current intensity makes the skin tender. With care there should be no burning, or electrolyzing, of the skin.

This treatment combined with symptomatic treatment as indicated will in a very short time reduce the unpleasant symptoms and soon produce a permanent cure.

The length of the full treatment will vary according to the severity of the symptoms, the time at which the case is seen and the possibility of carrying out the necessary general measures.

Some cases need only two to three weeks of the electric treatment, finishing the cure by means of remedies and general measures of diet and hygiene. Other cases more thoroughly established will require three or four months of electrical treatment; but, from the first there will be an amelioration of the distressing tachycardia, insomnia and general nervousness.

The pulse generally is decreased during the daily sitting from 15-20 beats per minute, and this decreased rate persists from the first for an hour or so following treatment and after a number of treatments longer, till, finally, the slower pulse is a permanent fact. The benefit to the general nutrition is also noticeable.

The fact that the direct current thus applied meets the most prominent indication for treatment, that it is without danger to the patient, that it benefits not only the local but general condition of the patient, that in case the surgical treatment should finally be decided upon this method has in no way hindered its adoption, but has put the patient into more favorable condition for such operation, bespeaks for it a consideration in these cases.

The following cases illustrate the above:

Case 1.—Female, aet. 35, examined May 6, 1907. At this time she presented the cardinal symptoms of exophthalmic goitre, the pulse was

132-144 per minute, the exophthalmos was marked and the thyroid enlarged. In addition to these symptoms there was loss of flesh, pigmentation of the skin all over the body but especially of the face, a tremor of arms and legs, great fatigue and insomnia.

She was given the direct current in the manner above described and was put upon nerve and heart tonics combined with rest and nutritious diet.

The patient found it necessary to carry on her occupation for two weeks, but in spite of that, during these two weeks the pulse decreased to 126 beats per minute, she looked better and slept well.

In three weeks the pulse varied from 102-84 and at the end of four weeks the pulse remained at 96, the color of the face was whiter, the exophthalmos less and the goitre decreased in size. There was no tremor in legs nor any part of the body and she complained no longer of palpitation. With this patient only three treatments a week were necessary. At the end of the four weeks she left the city; and has not reported since for treatment. At the end of five months she showed no exophthalmos, there was no enlargement of the thyroid, though the pulse was still somewhat rapid.

Case 2.—Female, aet. 34. Showed on examination slight enlargement of the thyroid, pulse 120, digestive disturbances, loss of flesh and lack of strength with tremor of arms and legs.

The direct current was not used in this case at first as it was impossible to manage it; but, later, as the symptoms did not entirely disappear under medication and general care, the direct current was used.

The patient received twelve treatments—three a week; and in six months from the first visit the patient was dismissed without medicine, the pulse being 84, strong and regular, the enlargement of the thyroid all gone; an increase in weight and in general strength. With the exception of the first month this patient continued a part of her regular daily duties, and when dismissed had been carrying on her full household duties for two months. The condition has been permanent over a year.

Case 3.—Female, aet. 42 years. In this case the pulse was never more than 96, but the patient had an enlarged thyroid, exophthalmos, pigmentation of the skin, palpitations, great nervous restlessness, insomnia and night terrors, and tremor all over the body.

This patient was given the direct current at once combined with a sedative nerve tonic. Her hours of resting were increased and attention paid to her general hygiene.

After five or six weeks of treatment three times a week, the patient showed a gain in weight, had no tremor, no night terrors, slept well night and day, the thyroid was nearly normal in size, pulse fuller and less palpitation. In two months patient was dismissed. The cure has been permanent.

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The modern trend of scientific research seems to devote its best energies to a study of the etiology and treatment of skin, venereal and genito-urinary diseases. Cures of these will place humanity on a true Utopian plane.

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Among the disturbing subjective symptoms connected with gonorrhea is the persisting itching about the meatus urinarius. This is one of the numerous instances in which itching does not betoken healing.

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Pemphigus does not necessarily relapse and should never do so under appropriate treatment. Good results may be obtained under a proper course of medication even in pemphigus vegetans.

Is the severity of syphilis decreasing? This question is one which naturally suggests itself when we observe cases today and compare them witih accounts which have been furnished to us by the writers of the Middle Ages. Even an examination of the atlases of fifty years ago will easily demonstrate that the disease has lost much in its severity.

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If a patient persists in running evening temperatures which cannot be accounted for after a thorough physical examination and blood examination, one should place the patient on increasing doses of the iodids, for the fever may be due to an old syphilitic infection.—*American Journal of Surgery.*

# A CASE OF METASTATIC SARCOMA WITH SPECIAL INVOLVEMENT OF THE OSSEOUS SYSTEM.

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I wish to report an interesting case of metastatic sarcoma:

*Clinical History.*—A female patient, farmer's wife, aged forty-nine, was admitted to the Northern Michigan Asylum, August 10, 1892. She was suffering from paranoid dementia, demented quite rapidly, and became very childish, imagining herself a baby of a few weeks old. Her history stated that she had been confined in an asylum in Ohio, twenty years previous to her commitment to this institution.

On admission, her physical health was good and it remained so until November, 1907. At this time enlargement of the right breast was noticed; examination revealed three large masses, one in the mammary gland, another midway between the gland and the axilla, and a third in the axilla. The last was deep seated and not movable, the other two were more superficial and movable. There was no involvement of the skin, and no infiltration of the surrounding tissues. A diagnosis of sarcoma was made, but on account of the extensive

*FIG. 1*

involvement, operation was considered inadvisable.

The tumors grew quite rapidly, the one in the axilla pushing its way up under the scapula; the breast became red and swollen and the tumor in this region became quite large. The patient was soon bedridden and helpless, and one day it was noticed that she was unable to use her right arm, and that it was red and swollen at a point midway between the upper and middle third of the humerus.

The patient's condition gradually became worse, death occurring in April, just five months after the tumors were first noticed.

*Post-Mortem Examination.*—At autopsy the following conditions were found: One tumor in the breast, another in the axilla, and a third between these two. On section they all presented the same appearance, being milky white in color and of a jelly-like consistency.

The right arm was cut into at the site of the swelling, and the bone was found to be separated, was very soft and could be easily crushed with the fingers.

On removing the scalp, numerous small softened areas were noticed on the outer surface of the skull. On removing the skull cap, it appeared quite soft and was found to be tightly adherent to the underlying dura. The inner surface of the skull cap was studded with little jelly-like growths, (Fig. 1), some of which had eroded entirely through the skull and were visible on the outside. Others which only involved the inner table, were removed when the dura was detached from the surface of the skull. These are shown in Fig. 2, giving the appearance of small tumors on the dura. They were merely adherent, there being no involvement of the substance of the dura.

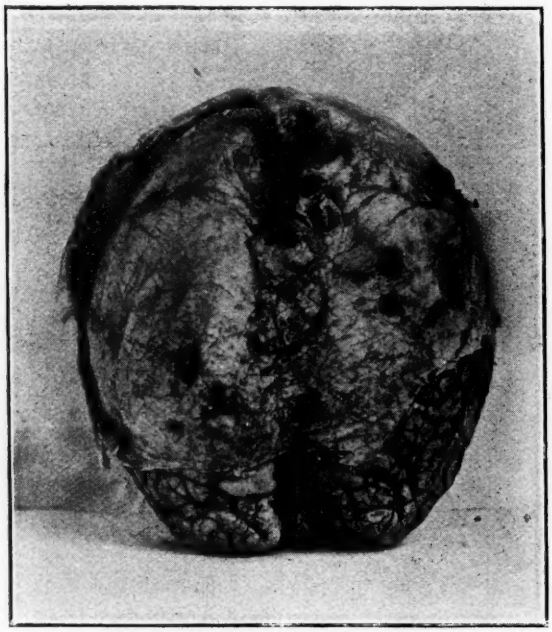

*FIG. 2*

On opening the thoracic cavity, the ribs were found to be friable and easily

crushed. All the bones which were examined showed this friable condition.

Other pathological conditions present were, enlarged thyroid gland, fatty tumor of the right buttock, three polypoid tumors in the uterus, and an enlarged spleen.

*Histological Examination.* — Sections taken from the breast tumors, showed typical small round celled sarcoma. The tumors in the skull cap were histologically the same as those in the breast. Metastatic tumors were not found in any of the other organs. The liver showed marked fatty degeneration.

The interesting points in this case are: (1) The extensive metastasis in the osseous system, there being no other discoverable metastases in the other organs. (2) The fact that the sarcomatous tumors developed late in life, the patient at this time being sixty-two years of age. (3) The tendency to tumor formation in the patient, there being four varieties of tumors present; sarcoma, fatty, polypoid and cystic (thyroid.)

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## WHAT THE MANUFACTURING D RUGGIST DOES FOR THE DOCTOR

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There are a great many subjects upon which most people have no formed opinions, and when they have opinions and know what they think, they do not know why they think so. As Henry Sidgwick expressed it:

"We think so because all other people think so
Or because—or because after all we do think so;
Or because we were told so, and think we must think so;
Or because we once thought so, and think we still think so;
Or because having thought so, we think we will think so."

The lack of quality of certain patent medicines has been brought forcibly to public notice. As physicians, however, we are much more interested in the remedies which have the sanction of the medical profession. After a new chemical substance has been isolated or a new medicinal use discovered, it is necessary for someone to produce it in sufficient quantity to make it marketable. This requires money, time and experience which the discoverer is rarely able to supply. The manufacturing drug houses have many times taken up this work and brought valuable remedies within the reach of the medical profession. Let us consider for a moment, the products of the manufacturing druggists. They are diphtheric antitoxin, thyroid extract, adrenal solution and other biologic products, tablets and pills of uniform dosage, standardized tinctures and fluidextracts and special formulas. These products are for the use of physicians in treating the sick. As in other lines of business the supply depends upon the demand, so the amount of medicine required by physicians is the chief factor in regulating the drug business. It is interesting to study the division of labor and to note reasons why the physicians cannot make their own infusions and tinctures and pills as

in olden times, and why even the retail druggist is unable to do all pharmaceutical work that is required nowadays. The enumeration of the products of the manufacturing druggist, especially the biologic products, shows the necessity of well-equipped laboratories. As an example we will take diphtheric antitoxin because it is one of the oldest and best known biologic products. It is not the manufacturer's discovery—it is not even an American discovery—but it is the manufacturer who takes out the government license and keeps the properly equipped stable and laboratory for its production. Of all the remedies of which we know this one is the most wonderful. The cost of production of antitoxin is high on account of the expense of immunizing horses, since all horses are not capable of producing antitoxin and it may happen that several have to be tried before a susceptible animal is found. When the discovery of antitoxin was made, the manufacturing druggists became interested at once, and the marketed article has been improved at various times since by work done at their expense. For instance a convenient syringe is now sent out as a container, which makes the injection of antitoxin much easier, and almost removes the liability of contamination with bacteria.

When as the result of research work by physicians and scientists in a manufacturing laboratory, a new remedy is put on the market, it has been considered a convenient protection to inaugurate a trade name for the article, for example antiphlogistine and listerine. These two preparations are used advisedly, because the preparations have had such a widespread use among physicians that formulas which are nothing more nor less than imitations of them have been placed in the last edition of the U. S. Pharmacopeia.

I wish to leave the subject of my paper to explain what is meant by a patented medicine. A "patent" medicine is not a patented medicine. Patented remedies are those which may be controlled by patents in two ways, by a product patent or by a process patent; and when a process is patented anyone may find it out by writing to the patent office in Washington and enclosing the necessary fee of a few cents. This knowledge of course cannot be utilized by them in the manufacture of the product until after the patent expires. Sulfonal and most of the foreign preparations which come to us are of this type. The so-called "patent" medicines are not patented at all, and never have been—with one exception. The term "patent" medicine is a misnomer. The name of a remedy may be copyrighted, but this is hardly necessary as the person or firm that used an original name has a common law right to it. The patenting of a process is now important to the manufacturer, who may spend considerable money on scientific work done in perfecting a method, and his only hope of reimbursement lies in a period of exclusive production. A proprietary remedy is simply one which has an owner—a proprietor—and may or may not be a "patent" medicine. The doctor who has a special formula put up becomes its proprietor.

A perusal of the eighth edition of the *Pharmacopeia* will show that various combinations originally put out under a trade name have been imitated in some of the recent additions to this volume, not under the original trade names, but names found suitable by those who compiled the book. Kataplasma Kaolini corresponds to antiphlogistine and presumably would not have been found in the pharmacopeia except for the intense popularity of the well-known preparation of Denver-mud, glycerine etc., which has proved useful and tremendously salable. The U. S. Dispensary

says of Kataplasma Kaolini: "This cataplasm was introduced into the U. S. Pharmacopeia (eighth edition) to supply the demand for an antiseptic poultice." It is obvious that the demand was created by the thousands who have used antiphlogistine. Antiseptic compound, U. S. P., is a good copy of Listerine, a proprietary germicidal solution used extensively as a mouth wash and to moisten dressings of wounds. The following is a list of remedies selected from the U. S. Pharmacopeia and National Formulary, of which proprietary remedies are prototypes. It is given to show how difficult it is for a physician to entirely avoid prescribing proprietary remedies by confining his choice to the remedies in the pharmacopeia and National Formulary. The equivalent in substance cannot be made different by a change in name.

Compound Digestive Elixir, N. F., corresponds to the old proprietary Lacto-pepsin.

Glycerinated Elixir of Gentian, N. F. —Gray's Glycerine Tonic. Essence of Pepsin, N. F.—Fairchild's Essence of Pepsin. Hexamethylenamine, U. S. P. —Urotropin and Uretone. "Alkaline Antiseptic," U. S. P.—Glycothymoline. Compound Solution of Cresol, U. S. P. —Lysol and Lysitol. Solution of Peptonate of Iron with Manganese, U. S. P. —Gude's Pepto-mangan. Milk of Magnesia, N. F.—Phillip's milk of Magnesia. "Chloral and Bromide Compound," N. F.—Bromidia. Antiseptic Solution, U. S. P.—Listerine. Guaiacol Carbonate, U. S. P.—Duotol. Creosotal Carbonate, U. S. P.—Creosotal. Compound Mixture of Chloroform and Cannabis Indica, N. F.—Chlorodyne. Compound Acetanilid Powder—Antikamnia. Sulphonethylmethane, U. S. P.—Trional. Sulphonmethane, U. S. P.—Sulphonal. Comp. Syrup of Hypophosphites, U. S. P.—Fellow's Syrup of Hypophosphites. Compound Tincture of Viburnum, U. S. P.—Hayden's Viburnum Compound. Compound Resorcin Ointment, N. F.—Resinol. Ethyl Carbamate, U. S. P.—Urethane.

Among the less recent examples we have Powder of Ipecac and Opium, or Dover's Powder, made originally by Dover, who is said to have been a quack. The present formula is almost precisely the same as the original, all attempts to improve it having been ineffectual.

Compound Powder of Morphine or Tully's Powder, was devised by Wm. Tully, of New Haven, Conn., and is another example in point.

Compound Acetanilid Powder contains acetanilid, caffeine and soda bicarbonate. In regard to this powder the nineteenth edition of the U. S. Dispensatory says: "This formula represents the essential composition of most of the proprietary headache powders."

Morphine was made by Merck as early as 1827. Mr. Merck was personally acquainted with certain investigators and shared their enthusiasm. Recognizing the importance of morphine to medicine he undertook its manufacture, although the venture was much against the advice of his conservative friends.

Bismuth and Ammonium Citrate was first made by Schnacht, of Clifton, England, as a secret preparation. A chemist having succeeded in analyzing it, reported his findings to the pharmaceutical society and Schnacht, who was present, acknowledged the correctness of the analysis, but denied having held the remedy a secret from physicians. The analyst gave the formula to a firm in Chicago, but it was not until numerous attempts had been made that a product with all the desirable qualities was obtained. A modification of this process is the one in use at the present time.

Many more examples might be cited for it is the way of modern medicine that when a remedy becomes very widely known and is shown to be of

value it finds its way into the U. S. Pharmacopeia, but always without credit to the originator. Lactophenin, Aspirin, Dionin, Betaeucaine and Benzosol are remedies originated with drug manufacturers under the protection of patent, and which we will expect to find in the (next) ninth edition of the U. S. Pharmacopeia. It is quite true that the pharmacopeia is not a mere list of articles approved by scientists and physicians, but is intended to give the composition of medicinal products, the extensive use of which justifies a notice of their composition. Nevertheless, trade names are carefully excluded from the volume, and teachers in most medical schools eschew proprietary remedies and recommend to their pupils, prescription writing only in accordance with the pharmacopeia and National Formulary. We regard the pharmacopeia as our standard, yet few physicians own one and a casual glance at one belonging to some druggist is about all we see of one. We have a new pharmacopeia only once in ten years, so new remedies are necessarily slow in finding their way into it. Some of the methods given for drug preparation are very old-fashioned. A manufacturing druggist has lately stated that the firm is unable to make tincture of digitalis according to the method given in the last edition of the U. S. Pharmacopeia, which will come up to their standard of quality according to chemical and physiologic tests. The method given in the pharmacopeia fails to thoroughly extract the drug from the plant. They therefore make two preparations—one tincture of digitalis, U. S. P., and one which is stronger. The strength of the tincture of digitalis is determined in the laboratories by injecting a certain quantity, definitely diluted, into the sub-lingual sac of the frog. For each gram of the frog's weight a given amount of the diluted tincture is injected.

The physiologic testing of drugs has been used for some time by the manufacturing druggist. It is the only reliable way of testing certain drugs, such as digitalis and ergot, and it is one of the best things that has been done for us by the manufacturer. A drug which is always physiologically tested is ergot. When properly active, ergot blackens the comb of the Leghorn fowl. This test, which has made ergot a reliable remedy, was inaugurated by the manufacturing chemist. As preparations of ergot lose their activity more rapidly than most drugs, and as ergot is used when positive results are desired immediately, it is obvious that a dependable preparation is most important. Some drugs are physiologically standardized and some are physiologically tested—some are both standardized and tested. Diphtheric antitoxin is tested to insure its freedom from bacteria by injecting it intraperitoneally into a guinea-pig. It is also standardized on other animals of the same species by injecting it subcutaneously with a toxin of known strength.

The extract of suprarenal gland is tested on dogs as a routine part of its production.

Strophanthus is also tested physiologically before it is put on the market by the drug manufacturer.

The eighth revision of the U. S. Pharmacopeia requires an alkaloidal strength for a number of drugs, about 20, but as yet there is no reference to physiologic standardization, such as have just been mentioned as routine tests by the manufactories and which will come and ought to come into recognition by the pharmacopeia.

In addition to improving the quality of our old, well-tried remedies, many others have been brought forward through the efforts of the drug manufacturer: cascara sagrada, yerba-santa, grindelia robusta, kola pichi, jaborandi and others. The drug houses have

brought out the concentrated tinctures and compressed tablets of exact measure. They have introduced the chocolate, sugar and gelatin coating of pills, and in many instances have "purified" the drug by removing foreign and inert substances. Quinine is a largely-used drug which has been greatly improved by the manufacturing chemist. Scientists from the drug houses have been sent out as special investigators to the countries where the calisaya bark is gathered and have studied the various alkaloids contained in it, determined the best time of year for gathering it, and learned about its proper treatment in every particular. There is said to be only about a half-dozen specifics in the whole materia medica, of which quinine is one. There is no doubt that it should be of reliable quality, if it is to be efficacious. In considering the prevalence of malaria in the pioneer days, it has been said that without quinine Michigan could not have been settled.

Again vaccination has almost eliminated smallpox. The drug manufacturers gave the medical profession a reliable bovine vaccine. They claim no honor of the discovery of vaccine—that is already finely divided between the medical profession, Lady Mary Wortley Montague, and others—but they have supplied the demand for a vaccine free from tetanus, syphilis and other bacteria. A few boards of health make vaccine, but the greater part of all that is used in this country is made by the manufacturing chemist and retails at about ten cents for material enough for one individual. The price is low, considering that vaccine is not a product of unskilled labor. Physicians and scientists are employed in collecting and testing the virus. This is also true of other biologic products, such as the digestive ferments. Since their introduction in the treatment of disorders of the alimentary canal the drug houses have produced in a convenient form such ferments as diastase, pepsin and pancreatin. Laboratory tests on these are carefully carried out to show the activity of the ferment in the test-tube. That is all the proof that could be expected of the drug house. Proof of the efficacy of a preparation lies with the physician and the patient. The drug house is only the supply house for the physician, and well have they met his needs, albeit sometimes anticipating them.

At the present time considerable work is being done at the various drug laboratories on tuberculins and bacterial vaccines. It may happen that investigators in the laboratories will be the first to find a specific for tuberculosis. At any rate, they are looking forward to putting one on the market, whether the discovery comes from them or from other workers. In either case the medical profession will try it thoroughly and accept it solely on its merits.

Quite recently the concentrated diphtheric antitoxin has come into use and the various biologic laboratories are offering a highly concentrated product, prepared according to the best scientific method, tested and standardized, representing in bulk only about one-third of the whole antitoxin, but having the full unit strength. Physicians are able to make much better use of such products as thyroid and suprarenal extract since they are supplied in an easily portable form. When the first came into prominence no tablet form of either was obtainable nor was a carefully standardized product.

Instead of originating any methods suppose the manufacturing druggists made only biologic products and preparations found in the U. S. P. and National Formulary? Their products would fulfill our present needs, but a large source of future remedies would be cut off, for if the manufacturer is restricted in the output it will decrease his pro-

gressive work on preparations which would be worthy of addition in the future to our drug armamentarium. Much credit is due the manufacturing druggists for taking up the work of various investigators and for the agility in keeping their products up to the demands of the rapidly advancing science of medicine.

Laboratory experimentation should be considerably in advance of the use of the products by physicians. "Whenever practice outruns the laboratory, and more or less impatient applies the latters' result to the prevention and cure of disease it frequently deals with half truths whose application may be harmful. * * * It is this sense of being surrounded by half-truths which should stimulate us all not to rest content with them, but to use our efforts unremittingly until they have been made whole."

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## DIFFERENTIAL LEUCOCYTIC ESTIMATION IN THE DIAGNOSIS OF ABDOMINAL NEOPLASMS.

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Detroit.

Since the pioneer work of Metschnikoff and Bordet in establishing our knowledge of the role of the polymorphonuclear leucocytes, differential counting of the white cells has become a commonplace clinical procedure. The desirability of a numerical and percentage estimation of the white cells in various affections is now so well established that in many of the infectious processes a careful examination of the blood for hyperleucocytosis is considered indispensable for proper diagnosis.

Who, with this certain laboratory method at his disposal, would fail to avail himself of it in the face of a confusional differential diagnosis between appendicitis and typhoid fever, or between typhoid fever and a central pneumonia? The presence of an increase in the polynuclears would surely eliminate typhoid in either instance while it would, at least, favor the other diagnosis.

In acute infections attended by local reaction, the results of a leucocytic count are infallible and, in case of obscurity, their teachings invaluable. The presence of fluid accumulations or other unorganized extravasations, wherever found, except in rare instances, are surely disclosed by recourse to a percentage count of the polymorphonuclears. These indications have long been recognized by the general profession and but few of us do not heed them in such instances. But, I believe, there still remains a large class of cases, in which for purposes of careful and accurate refinement of diagnosis a determination of the presence or absence of polymorphonuclear hyperleucocytosis is equally reliable and fully as important. It is in this class of cases, too, that the importance of such a determination is not generally recognized. At least, I know its teachings are but rarely made use of. The class to which I refer is that of nonmalignant tumors and their complications.

As a general rule we are all familiar with the increase in the polymorphonu-

clears both absolute and relative which is found in malignant disease. The occurrence of an exaggerated polymorphonuclear count is not, however, invariable, its presence and extent depending upon a number of factors.

Therefore, a differential count of white cells may, perhaps, tell us something of the resistance being offered to the progress of the disease, a great increase in the count denoting a strong resistance, while a normal or diminished count indicates approaching dissolution. Beyond this, little is accomplished.

But an estimation of the leucocytic count in abdominal neoplasms of non-malignant character is of decided importance. In uncomplicated cases of this variety, blood changes affecting the whites do not occur. It is, therefore, for the detection of complications, especially when operation is contemplated, that a white count is invaluable. The following four cases, all referred to me for operation within the past week, are presented as practical illustrations of the question under consideration:

Case 1. J. M., age 54, merchant, was referred for operation June 2nd, with the following history. Until the present illness, he cannot remember ever having a sick day. About February 1st, he began to suffer from loss of appetite and gaseous eructations. He was conscious of a feeling of distention in the abdomen which seemed especially marked over the upper half. Because of this condition, he applied to a physician for relief. He says no examination was made at this time; he was given some medicine. No relief followed. About March 1st, he experienced a severe stabbing pain in the left side of the abdomen which, when questioned, he locates at a point formed by the junction of a line extending to the left from the umbilicus with another let fall from the middle of the left costal margin to the middle of Poupart's ligament. From a pain which was paroxysmal and stabbing in character, the condition changed to one of a constant, dull ache. At the time of my first examination he had a temperature of 101°; pulse 104. His general appearance was good. He had lost twenty pounds in weight but still weighed about 170. His cheeks were somewhat whitened although cachexia seemed absent. Conjunctival and buccal mucosae were pale, tongue slightly coated and flabby. Inspection of the abdomen showed a rotundity devoid of irregularities. Palpation disclosed a hardened area to the left and slightly above the umbilicus. Deep pressure showed a large nodulated mass, immovable, and extending downward and in all directions within the abdomen. No fluctuation could be determined. He had been seen by an eminent surgeon and inoperable sarcoma diagnosed. A blood examination was decided upon. This showed a hemoglobin content of 80%, total whites 14,700, polymorphonuclears 90%, mononuclears 10%. Gangrenous degeneration of an omental sarcoma or simple long-standing abscess was diagnosed and an operation advised. Incision over the point of superficial hardening allowed the escape of about a quart of greenish-yellow pus. The cavity surrounded the umbilicus and included it. After a thorough examination of the cavity and surrounding mass by bimanual palpation, the wound was closed with drainage *in situ*. Smears of the pus and agar slant cultures showed staphylococci. Longstanding abscess was the diagnosis and the post-operative history has born it out, for the surrounding mass has now disappeared and the wound is rapidly granulating.

Case 2. Miss K. M. N., age 56, had had a large fibroid of the uterus for about 27 years. It had been slowly increasing in size and for about a year back had been causing considerable pain. Nausea had been frequent, bowel movements painful, micturition frequent and distressing. She protested against operative removal. Finally her general condition became so unbearable that operation was consented to. She was now so enfeebled that a successful issue was despaired of. She could retain nothing in her stomach, the pain was excruciating, her pulse from 110 to 130 a minute and weak. Fever of an ephemeral character has been noted on several occasions during the past year but always disappeared. She entered the hospital June 4th, with a temperature of 98.8°, but for the next two days the thermometer registered only from 98 to 98.4°. Blood examination showed hemoglobin 70%, erythrocytes 4,200,000, with considerable poikilocytosis, whites 15,100, polymorphonuclears 86%, momonuclears 14%. Gangrene or infection of the growth was diagnosed. At operation, about

three quarts of greenish-yellow purulent appearing material escaped when one angle of the tumor ruptured. It was a huge fibro-myoma of the uterus with subsequent degeneration of the interior of the mass. A complete supra-vaginal hysterectomy was performed and intra-abdominal drainage inserted. Microscopical and cultural examination of the fluid showed it to be free from micro-organisms and to consist solely of tissue detritus. Convalescence has been uninterrupted.

Case 3. Mrs. M. K., age 54, had noticed an increasing abdominal enlargement for about one year. She presented herself for operation June 2nd. Menstruation had last occurred February 1st, and since this time growth of the abdomen had been far more rapid. For about one month back, she had had a great deal of pain, especially in the right iliac region, in addition to annoying symptoms. Abdominal and vaginal examination revealed a large, somewhat irregular tumor involving the uterus. From the history and signs, fibro-myoma was diagnosed. Fever was entirely absent but, as a routine measure, the blood was examined for leucocytosis. The following count was made; leucocytes 10,200, polymorphonuclears 79%, mononuclears 21%. Some complication of an inflammatory nature was suspected. Operation confirmed the nature of the growth and revealed the presence of double pyosalpinx, the tube on the right side being the size of three fingers.

Case 4. Miss L., age 44, first seen June 7th. She gave a history of rather rapid abdominal enlargement extending over a period of about eleven months. Regular menstruation had been present until about four months ago. The vaginal inspection showed purpling of the mucosa but only such as might be accounted for by pressure. Ballottement could not be elicited. Digital examination showed an enlargement of the uterus strongly suggesting pregnancy. Inspection and palpation of the abdomen showed a uniform tumor mass, centrally located, which extended upward to a point four finger breadths below the ziphoid process. A blood examination showed a normal number and percentage of cells. The diagnosis leaned toward fibromyoma although pregnancy could not be entirely excluded. Abdominal section revealed a symmetrical-shaped tumor of the uterus which measured eleven by eight inches, fibromyomatous in character.

The occurence of several cases of this character in my practice in so short a time, all presenting complications which, in some instances at least, would not even have been suspected had not the routine examination of the blood disclosed them, has impressed me so deeply, that I feel the time is ripe to plead for the more frequent routine employment of the procedure.

Reference to any but the newest works on examination of the blood, and even some of these, discloses the statement that a moderate leucocytosis (10,000 to 13,000) exists in pregnancy. This is not in accord with the latest investigations (Greco and Zangemeister), however, and certainly does not conform to our own findings. In the absence of suspicious pelvic conditions antedating the pregnancy, we can say that we have failed to note an increased polymorphonuclear count in the parturient condition. According to Hall, hyperleucocytosis does not appear until the onset of labor.

Were leucocytosis really present throughout pregnancy, as is so frequently stated, case 4 would not have come to the table with the diagnosis more or less in obscurity. Pregnancy could have been ruled out when the number of white cells showed no increase.

With the knowledge before us that malignant disease often does and pregnancy uniformly does not product leucocytosis, the value of estimating the percentage of white cells in the circulation of an individual with an abdominal neoplasm cannot but impress us and should demand of us more frequent consideration.

In the benign conditions hyperleucocytosis unerringly denotes the presence of dangerous inflammatory or degenerative processes which demand especial care at the time of operation to safeguard the life of our patient.

The presence of actively forming re-

active adhesions between the growth and the visceral and parietal peritoneum and omentum is indicated by a moderate increase in the percentage of polynuclears in addition to the clinical symptom of pain.

Necrobiosis or gangrene of a portion of a fibroid or infection of cystic contents is unerringly detected by a high polymorphonuclear count, even in the absence of the usual clinical symptoms of these complications. Quiescent pus tubes as a complication of fibro-myoma of the uterus is another condition whose presence may be unsuspected without an examination of the content of white cells in the blood.

Knowing that an inflammatory condition and perhaps virulent pus is present, our attitude in and plans for the case are entirely changed. Pus, in all probability containing active organisms, demands a delay of operative interference. Such cases do best under the judicious application of ice and rest in bed with such symptomatic treatment as may be deemed necessary from time to time. Under a waiting regime, the acute process, with but rare exceptions, rapidly subsides and, after a varying period has elapsed, such cases may be operated upon in the quiescent stage with very little danger of disastrous results. Microscopic examination of smears taken from the pus shows organisms with granular protoplasm which takes ordinary stains poorly or not at all, which indicates their attenuated character. The uninterrupted convalescence of the patient bears out the wisdom of our waiting, such wounds as a rule healing by first intention.

In the light of these results, judicious, watchful waiting has become a methodic procedure with me to which I feel can be attributed many a successful issue in what I know would otherwise have been a fatal operation. In no other class of cases is a better knowledge of when and how to wait required of the surgeon. His success depends fully as much, if not more, upon knowing when to operate than it does upon how to operate. Who of us has not seen cases of appendicitis succumb as a result of too early use of the knife? Who has not witnessed the terrible results of disturbance of inflamed pelvic organs before the acute inflammation or the exacerbation of a chronic inflammation had completely subsided. Again, I say, the utmost caution and good judgment is required in the presence of pus. We must know when to wait, when it is absolutely necessary to wait, and when immediate action is demanded. I need not point out the disastrous results of failure to measure up to the requirements of the case. We are all familiar with them. A percentage count of the leucocytes will at least give us an inkling of the severity of the infective process and help us in making our decision concerning the course of action indicated.

When immediate interference is demanded, the findings of a blood count will often alter our entire plan of attack. Operation for drainage in appendicitis with abscess formation, uniformly performed by the abdominal route, is anatomically indicated and often surgically more proper at the outer border of the quadratus muscle. All our manipulations being extraperitoneal, much of the attendant danger is avoided and many of the annoying sequelae circumvented. In case one, above enumerated, our first inclination would be to make a median incision and attempt extirpation of the mass, followed, perhaps, by resection or an anastomosis of gut. Our plans were entirely changed upon the detection of the enormous leucocytosis, resulting in the happiest of results.

"Forewarned is forearmed" is an axiom which in these conditions is forced home upon us. If we heed the warning, escape of the infective products into the

general paritoneal cavity can be effectively prevented and the percentage of recoveries from an otherwise severe operation materially augmented.

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## ASEPSIS IN OBSTETRICS*

**EDWARD T. ABRAMS, A. M., M. D.,**
**Dollar Bay.**

If we would know, realize and appreciate the full freedom, the large liberty, and the perfect government growing out of a democracy, we must of necessity go back over the historic ground of the past; we must mingle with the founders of our country; we must wander through the various scenes and partake, in some degree at least, from Imagination's Casket, of the privations, the sufferings, and the hardships of the "First Settlers." And when all this has been done we must cross the broad Atlantic to the home of feudalism and there follow the well-nigh imperceptible thread back, and back, until we find ourselves groping in the gray dawn of the unknown. And so it is in studying the advancements made in this noble profession of ours. Surgery, together with all its allied and co-related branches, seems to us today so matter of fact, so simple and self-evident in all of its details, that we are apt to take it as an undeniable fact that this bacteriological perfection, which is the common knowledge of us all, has always existed; but not so, if we would know, realize and appreciate the perfect technique of today we must go back over the path trod by our predecessors.

In no department can this be more truthfully said than in Obstetrics. The very common sense and matter of fact precautions practiced today in this branch of medicine are so axiomatic to the average mind that we are oftentimes in danger of overlooking the struggles, ridicules and acrimonious debates through which the contentions passed before the present perfected state and conditions were attained, and at last became the accepted dictum and belief of the entire medical profession.

Would we know, realize and appreciate what this means, and has meant, to the world of mothers of the past and future, we must let our memories and imaginations have full sway, as they sweep over the vast field of suffering, invalidism and death previous to the adoption of Anti-Septisism and Aseptisism in the general practice of obstetrics.

More than half a century has rolled away since the memorable Friday evening in Boston when our own Oliver Wendell Holmes presented his epoch-

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making paper on the "Contagiousness of Puerperal Fever." Truly it was an immortal essay. He startled his hearers with the sentence, "The time has come when the existence of a private pestilence in the sphere of a single physician should be looked upon, not as a misfortune, but as a *crime.*" This, gentlemen, was five years before Semmelweis, a young assistant working in the maternity hospital at Vienna, was laughed to scorn and the madhouse, because he persistently held that every case of puerperal fever was caused by the absorption of putrid animal material.

These two contentions of Holmes and Semmelweis, standing side by side, marked the heavens with the "first steps of day." It was the beginning of the gray dawn of the morning that was breaking in upon suffering humanity, and which was destined to unfold into the bright, clear light of a grand and glorious day. We know today that puerperal fever is puerperal infection; we know how to prevent it, and we cannot, by any modern sophistry, shift the responsibility.

Those of you who have the fourth edition of Playfair, issued in 1882, will find that while he includes all puerperal fevers under the head of puerperal septicemia, he nevertheless admits that "there were facts difficult to reconcile with theory and for which we were unable to give a satisfactory explanation." In the year 1883, Thomas Moore Madden, speaking before the British Medical Association, said that it did not matter by what term or terms we distinguished the malady, provided we recognized that there was "a specific infectious disease consequent on parturition." Kindead, Professor of Obstetrics in the University of Dublin, taught that "such fever, from whatever sources arising, except septicema, is a specific infectious disease, and like those diseases, occurs sporadically and epidemically.

It was during the winter of 1883 and 1884 that puerperal fever was brought up prominently before the profession of America by being thoroughly discussed by the New York Academy of Medicine in December of 1883. It was at this meeting that Thomas defined puerperal fever as "an infectious disease due, as a rule, to septic inocculation of wounds of the genital tract." It was at the next meeting that Fordyce Barker, that grand and commanding figure in American medicine, took part in the general discussion; but unlike Polk and Thomas, who had turned their faces toward the rising sun, Barker saw it sinking slowly in the west and beheld only the dying day. He clung to the old dogma of a specific infectious disease and ridiculed the advanced ideas of his colleagues as follows: "Does every parturient woman in performing the function of maternity, like the scorpion that carries in its tail an agent for suicide if death be threatened by fire, generate an equally fatal poison in a corresponding locality? If so, then the state should make childbearing a penal offense for families who do not have means enough to carry out elaborate antiseptic requirements." While, perhaps, a majority of the profession held that puerperal fever was a septic poison, no one seemed to have a very clear or definite idea as to the nature of the poison. Carbolic acid had been used as a disinfectant in Copenhagen Maternity since 1870, as it had also been by many obstetricians.

But the time was ripe to put away the time-worn dogmas—to bury forever in the grave of the historic past the ancient conceptions of the causative factor of the slayer of mothers, and the despoiler of homes, and in its place to establish the life-saving gospel of surgical cleanliness. The first demonstratable crusade was inaugurated in the New York Maternity. The mortality in this hospital in 1881 was 2.36% and was thought to

be exceedingly low. In 1882 it was 3.25%. During the year 1883 out of 345 parturient women 30 had died, and the morbidity was something enormous. Toward the end of this year the mortality had so greatly increased that one woman in four delivered died.

It was in October of this year that radical and systematic changes were made in this maternity. To no man in this country is more honor due than to Dr. Henry Garrigues, of New York. When he assumed charge of the New York Maternity in the fall of 1883, he brought to the service the fulness and enthusiasm of maturity, together with the thoughtful, calm and energetic doggedness that always marks a man as being one that is and will be superior to the emergency. He laid down principles broad in their comprehension, far-reaching in their influence, and which were to be brilliant in their achievement. Sulphur was freely used for fumigation; soap and water followed by the application of a strong solution of bichloride was the menstrum with which the floors and walls received their new baptism of aseptism, and in order that the new baptism might become efficacious and entirely supplant the old, the floors of the wards were sprinkled several times a day with bichloride solution. Visitors were not allowed to visit the wards; the attendants were not permitted to visit other hospitals nor to enter the dead-house. Each patient on entering received a bath and clean linen. The abdomen was washed with soap and water, as were also the genitals, followed in the latter by bichloride. The vaginal douche was used in every case, using about two quarts of the bichloride solution. No vaginal examinations were permitted except, mark you, until after the hands had been scrubbed with soap and water with a good brush and then soaked in 1/1000 bichloride. As soon as the head appeared at the vulva a piece of gauze soaked in the bichloride solution was applied to the parts. As soon as the child was delivered the parts were covered as before. The placenta was not ruthlessly torn from its attachment, but gently expressed by the Crede method. If the fingers had been introduced into the vagina or uterus, then it was followed by the douche, but not otherwise. Only those of you who were either in active practice or were students at that time, know of the skepticism and ridicule with which this treatment was received. We all know what its influence was; how the pestilence, together with all its dread, was driven out never to return. Now, in three months after the introduction of this treatment, or rather the adoption of these preventive measures, Dr. Garrigues could write, "The effect of this treatment has been wonderful. As if by magic all trouble disappeared. Ninety-seven women have been delivered since its introduction and not only has none of them died, but there has scarcely been any disease among them—only three have had any rise of temperature. The pavillions are scarcely recognizable. Where we used to have offensive odors, feverish, prostrated or despairing patients, over-worked nurses and despondent doctors, the air is pure, the patients look well, their temperatures are normal, the nurses are cheerful and the doctors happy." Gentlemen, in the full light of these facts and experiences, what general leading his armies over the bloody battlefield to the victorious heights beyond has contributed to the world's progress and happiness more than have those men who defied scorn and ridicule that they might bring joy, happiness and life itself to the homes of humanity? Surely, "Peace hath its victories far more than war," and while the honors and emoluments of this world come to our profession very tardily if at all, yet we know that somewhere in the great

unknown future, we shall receive our reward.

"For tho' from out our bourne of Time and Place
The flood may bear us far,
We hope to see our Pilot face to face
When we have crossed the bar."

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## THE DIAGNOSIS AND TREATMENT OF SOME CARDIAC ARHYTHMIAS.*

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Detroit.

In the whole domain of modern medicine no achievements attest more strongly to the results of scientific research, than the advances that have been made during the past five years on the study of the heart. Overshadowed successively by the brilliant work in bacteriology, serum reactions, and serum therapy, the endless labors on the physiology, pathology and clinical symptomatology of the heart, stand today as monumental evidence of the advances that have given to medicine new and important knowledge on this subject. I shall not presume on your time to review the history of cardiac diseases. You have all at some time read the discoveries of Harvey, on the circulation; of the work of Auenbruger on percussion; of Senac on pathology and rational therapeutics; of Corrigan on the pulse; the fascinating descriptions of organic cardiac diseases by Corvisart, Skoda, Stokes, Parry and Flint. During all this time our knowledge has really been confined to organic heart diseases. We have gladly accepted conditions of incompensation following valvular insufficiencies or myocardial degeneration as typical of organic disease. But on the other hand, irregularities and intermittencies, that have had no evident basis in gross cardiac lesions, have been complacently grouped under the ever convenient head of functional neuroses.

Out of this chaos into which ignorance has thrown many inexplicable functional conditions, modern laboratory research and clinical observation have succeeded in formulating many interesting pathologic states. In no field of medicine do we find more beautiful examples of how purely scientific investigation has worked hand in hand with bedside study, in unravelling the etiology of a group of perplexing conditions. Gaskell, Richet, Engleman, Erlanger. His and other physiologists have sought to explain the extra- and intra-cardiac mechanism of heart beat. Cushney, Wenckebach, Krehl, Franck, Gerhardt, are among those pharmacologists who have studied the behavior of the heart, under the influence of toxic substances. Hofman, Mackenzie, Hering, Hirschfelder, Dock, Schmoll and many others by graphic records have determined upon clinical classifications for cardiac arhythmias. Finally we are indebted to the pathologists who have stepped in and carefully sought out minute lesions that correspond to the symptomatology of the cardiac conditions.

At the present time we have arrived at the point where we can make use of the

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discoveries in these several fields, catch up the separate threads as it were, correlate the many facts, and bring to light explanations of many hitherto functional diseases of the heart, that are of surpassing interest. Before I go further into this subject, I want to bring to your attention one book, the product of James Mackenzie. Engaged for twenty years in active practice in a small town in England, he was led to enquire into the cause of pulse irregularity, in order that he might "appraise its value as a diagnostic sign." During these years of patient observation, he never failed to make careful graphic records when opportunity presented. To-day his modestly entitled book, "The Study of the Pulse," stands as a classic in medicine, unequalled in any language for its completeness, genuineness, and accuracy.

It will be appropriate at this time to recall some of the accepted theories of heart beat, and explain the forms of normal, radial, and jugular pulse. We must consider the heart as a muscular organ living in the body, under its own automatic influence. It is in itself capable of rhythmic activity, and whether or not it contains a nervous center in its own muscular structure, it has no center in the medulla. True it is susceptible to vagus and accelerator influences, but when these are paralyzed or cut, rhythmic contractions of the heart do not cease. Hence we look upon these nerves to have a moderator influence only. Normal functional activity therefore residing in the heart muscle, can be influenced as far as the intracardiac mechanism is concerned in four ways. These, Engleman explains admirably as follows: (1) The rate of stimulation that produces heart beat may change; (2) The heart muscle may become more or less irritable to stimuli; (3) The contractile power of the heart muscle may be affected; (4) The conduction paths from sinus to auricle to ventricle may be altered. Let some pathological influence, positive or negative, affect one of these four means of regulation, and an arhythmia results.

The most commonly seen cardiac arhythmia is familiar to all. It is that irregularity of the pulse that occurs during respiration. It is seen most frequently in young people when, during deep inspiration, there is a gradual shortening of the pulse period, whereas lengthening occurs during expiration. Suspension of breathing may also bring it on. Exaggerated respiration causing an increase of pulse rate, is the only condition under which it normally appears. In its clinical aspect it points distinctly to an irritability of the nervous mechanism of the heart, especially of the extracardiac nerves. Atropin, to which children are more irritable, removes it. This fact in itself points to some disturbance of the vagus inhibitory tone. Respiratory irregularity is seen most marked clinically in basilar meningitis, in convalescence from protracted fevers, in neurasthenia and following prolonged use of drugs that affect the extracardiac mechanism. It always points to some instability on the part of the vagus, but is in itself no cause for alarm.

The next most frequently seen irregularity, differs from the first in that it arises in all cases from an intracardiac condition. It is termed extra-systole; also premature systole. In general the term signifies a contraction of the ventricle before the time of regular systole. Such a contraction may occur at rare intervals, i. e., sporadically; it may occur regularly, giving the sensation to the palpating finger of grouped beats, or the pulsations may occur successively, inaugurating a tachycardiac. It is evident that extrasystole must occur at some time during the diastolic phase of the ventricle. If it occurs very early in diastole there may not be enough blood in the ventricle, and the contraction may at some time be so weak that the aortic

valve cannot be opened against the high pressure in the aorta, and no pulsation reaches the arteries. Then the next regular beat of the heart is missed, because the ventricle is in complete contraction, at the time when the regular systole should occur. The result to the palpating finger is a missed or dropped beat. This is a common occurrence and explains a phenomenon we all have frequently observed. If many of these occur in succession a slow pulse results, and we have a bradycardia due to extrasystoles. An extrasystole occurring a little later in the diastolic phase will send a small column of blood into the arterial tree. We recognize this clinically by a large, followed by a small pulsation, although in many instances the time irregularity is not discerned. Then, just as in the previous instance, the next regular beat does not materialize. Should extrasystoles occur in marked rhythm, resulting in a pause each time following the extrasystole, a bi- up to a polygeminal pulse results. That form of extrasystole, which causes a tachycardia, is due to a series of interpolated extrasystoles. Hering first demonstrated this in 1900, and since then other observers have proven that it may result as described. Most patients possessing some form of extrasystole are unaware of the presence of this condition. Sporadically occurring cases of extrasystole have no clinical import. Others, however, come to us complaining of the sensation of the heart trembling, or pounding, or stopping. If in these cases we detect a bradycardia, or a cluster of extrasystoles, or a geminal pulse, it is a sign that some abnormal stimulus is at work in the heart muscle. That it is in the heart muscle can be proven by giving atropin, and paralyzing the vagus.

What is the nature then of these stimuli that cause extrasystole? No form of irritation of the extracardiac mechanism will produce them. It is believed that they are either of a mechanical or a biochemical nature. We know that any mechanical irritation to the heart will arouse extrasystole. The prolonged use of certain drugs, or the absorption of toxic substances will give rise to them. Hence several arbitrary divisions have been made on the basis of the etiology, but these are of little value. We find extrasystole in organic heart disease, probably due to mechanical causes; we see it often following severe fevers, and here it is of serious import; we meet with it in general conditions, such as constipation, diarrhea, gastritis; finally a large group of patients suffering from myocardial, or arterial changes resulting in hypertension and vascular derangements are prone to develop extrasystole.

In this connection pulsus alternans may best be mentioned. It consists of a large, followed by a smaller beat in regular rhythm. Though at first associated with extrasystole from its resemblance to the bigeminal pulse, it is in reality different. In many cases it resembles a dicrotism. Experimental observations have shown it to be due to changes in the contractility of the heart muscle, the power of contraction failing to return completely after each full beat. MacKenzie found it present in all cases of angina pectoris, but it is also found, and most exclusively so in cases of high blood pressure, and arteriosclerosis. In one case which I shall show later it occurred in cardiac incompensation with nephritis.

A group of clinical symptoms first noted by Stokes, and later more fully observed by Adams, has interested many investigators for many decades. (1) Slow pulse varying from 10 to even 5 beats per minute; (2) attacks of giddiness, vertigo, syncope, and apoplectic or epileptoid seizures; (3) marked venous pulse in the veins of the neck, that do not correspond in rate to the slow apex beat; (4) dyspnea; (5) cyanosis,—these prominent features form the syndrome commonly known as Stokes-Adams disease,

in recent years more properly termed heartblock. The distinct relationship that exists between the auricles and ventricles, has long been a subject for investigation, and the opposing views of conductivity by nerve and by muscle have given physiologists much food for discussion. The early neurogenic theories of Volkmann have in general given way to the myogenic of Gaskell and Engelman. Four years ago another chapter was added to cardiac physiology when the younger His explained the remarkable bundle of fibers about 18 mm. long, 2.5 mm. wide, and 1.5 mm. thick, that begins in the septum of the auricles below the foramen ovale, runs downward, and forward through the fibrous triangle of the auriculo-ventricular junction, and then divides into two limbs which pass down along the ventricular septum. Each part branching, grows gradually thinner, finally merging into the muscle fibers of the heart. More recent work has described two nodes,—one in the situation of His' bundle in the fibrous septum called the auriculoventricular node, and the other an upward continuation of the bundle situated at the junction of the great veins and auricle, named the sinus-auricular node. Many views as to the nature of this interesting bundle have been expressed. The most recent of Tawara, Erlanger, Gaskell, and Keith consider it as a group of finely interlacing conducting fibers, poor in sarcoplasm, beginning in the muscular structure of the great veins, and uniting into a bundle at the sinusauricular node, traversing the heart as described and terminating in many ramifications as the fibers of Purkinje in the muscle cells of the ventricle. It is this system of fibers that transmits stimuli from auricle to ventricle and vice versa; it is this system that has a moderator effect on the ventricles, just such a one as the vagus exercises solely on the auricles; and it is this same bundle that, with the aid of the vagus, regulates heart beat so that under normal conditions the interval between auricular and ventricular systole is about one-fifth of a second. If however a lesion occurs in this conducting or rather concording path, one that prevents a free passage of stimuli from sinus to auricle to ventricle, this one-fifth second interval will be prolonged, and the ventricle will beat at a separate rate from the auricle. In other words the ventricle will assume a rhythm of its own. That this is possible follows from the interesting observation of Gaskell, who found that isolated strips of heart muscle under proper conditions will contract in a rhythmical manner of their own accord. Therefore when a lesion of the bundle of His occurs, completely blocking the passage of all auricular stimuli to the ventricle, complete heart block occurs. Under such conditions, while the auricle may beat 72 times to the minute, the ventricle may contract but 24 times, or a 3 to 1 rhythm follows. If, however, the blocking is incomplete, a few of the stimuli may pass through, giving us a partial heart block. Erlanger's beautiful experiments, though familiar to most of you, bear repeating here. Briefly, by an ingenious clamp he caught up the bundle of His in the exposed heart of a dog. Slight compression blocked some of the auricular impulses, further compression cut more off, till tight clamping entirely blocked all conduction, and the auricles and ventricles beat with independent rhythm. It is evident that the result of heart-block is slow pulse, and at times this pulse becomes so slow that many seconds elapse between succesive beats. At these times when the blood is not being properly sent through the arterial system and the venous channels become filled, due to the stasis beyond, attacks of vertigo may occur, or syncope may follow, or at times epileptiform seizures result. At the same time cyanosis and dyspnea are present. Bradycardia, cerebral attacks, marked venous pulse in

the neck, cyanosis and dyspnea,—here we have the explanation of that remarkable clinical syndrome of Stokes-Adams disease or heart block. Since these fascinating experiments have disclosed the pathology of the whole subject, numerous clinical records substantiating these views have found their way into the literature. Sclerosis of the bundle of His in some part of its course has been frequently found; gummata are at times the cause of the block; marked alcoholic excesses, and infectious diseases, resulting in myocardial degeneration have been reported. Lately Schreiber described a case determined by emotion. At present I have a similar case under close observation.

The treatment of slow pulse has received but little attention. This is so often unfortunately the case when pathology, in a new field of investigation, is the all absorbing topic. Certain practical lessons have already been learned. First of all the administration of digitalis is fraught with danger. MacKenzie has shown that by prescribing doses of digitalis in the case of a susceptible myocardium, heart-block may result. It is supposed that the drug has an especial action on the auriculoventricular bundle of His; clinically such cases have been seen. In cases with a syphilitic history anti-specific treatment is certainly indicated. In a few instances patients have entirely recovered. The iodides should be administered in all cases, firstly, because in a recent report of a fatal case of heart-block, a gumma was found in the septum, though the patient gave no history or sign of syphilis; secondly, because the iodides tend to diminish tension in sclerosis and hypertension. Caffein and camphor have been found of service when injected hypodermically, the former augmenting the contractibility of the ventricles, through direct action on the heart muscle, the latter increasing the irritability of the heart muscle. General measures of rest, diet, bathing, and quiet must be enforced, for in these patients departure from the simple life may bring on a fatal seizure.

Of all the cardiac irregularities tachycardia presents some of the most perplexing problems. Rapid heart may result from a variety of causes, but depending on its origin and manifestations, it practically divides itself into two distinct types, the simple and the paroxysmal. Simple tachycardia occurs especially after violent exercises, in fevers, in cardiac incompensation, in Basedow's disease, and in atropin poisoning. In these the subjective sensations of palpitation, precordial distress and anxiety may or may not be present. The tachycardia has been variously explained by a (1) toxic stimulation of the accelerators, (2) by destruction of the vagus, (3) by an attempt on the heart to maintain normal blood pressure. In this condition we have a rapid pulse that steadily climbs from the normal to any degree of rapidity, and one which may vary its rate at any time by any number of pulsations per minute. In the paroxysmal type we are dealing with an entirely different form of tachycardia. In this the characteristic sign is a doubling or a double-doubling of the normal rate, the attack coming on with comparative suddenness and terminating with equal abruptness. It is never accompanied by a gradual increase in beats, nor does it ever end by a slow decline of the pulse rate. Its maximum is always a multiple of the normal. The etiology is unknown, though the predisposing causes are many. I have seen it in advanced tuberculosis, in arteriosclerosis, in valvular disease, and in a case of dilated stomach with distension. Hirschfelder's case appeared in an old man with marked arteriosclerosis. The history showed the condition to be of twenty years standing. Hewlett's case was in an alcoholic. Schlessinger reports a case in a woman of fifty years suffering

from tachycardia as a result of excessive use of tobacco. Rihl has seen it in individuals addicted to the use of coffee. Hoffman reports cases after some fright or strain. In a case of carcinoma of the lungs, MacKenzie found an interesting example of it. Rheinhold reports a case of it in syphilitic basilar meningitis. As a rule premonitory symptoms usher in an attack. There is a sensation of fear or anxiety, unpleasant sensations of nausea, tingling, darting, or buzzing are felt. The patient often trembles, and may even shake violently, as in a severe pneumonic chill. There may be headache, giddiness, and even unconsciousness. Some observers have witnessed epileptoid attacks in connection. Clarke recently reported two such cases, one of which was a woman who, following a severe influenza, was stricken with these seizures of tachycardia, when she left her bed she would fall unconscious, her eyes cross, and her muscles become rigid, but she would quickly recover from both unconsciousness and tachycardia, when in the recumbent position.

Besides the definite ratio of doubling or double-doubling of the rate, other symptoms are present, depending on the severity of the tachycardia, and the length of time it persists. The reduction of the blood pressure comes immediately. Soon after a position venous pulse is seen in the jugular. Presently the right heart dilates, and a tricuspid insufficiency ensues. If the attack persists, other signs of an incompensated right heart follow,—marked venous pulse (of ventricular type), edema of the ankles, enlargement of the liver and stomach symptoms. The evil results of this tricuspid incompensation only become dangerous after the attack has persisted some time. Many explanations have been advanced to account for these extraordinary phenomena. The first advanced was that of an extrasystole, interpolated between two regularly occurring systoles. This made the tachycardia of distinctly ventricular origin. Schmoll has produced tracings lately to substantiate such a view. MacKenzie has sought to explain it upon the basis of extra-systoles, saying that the positive venous pulse during the attack bears this out. But if we consider that there is always a distinct doubling or quadrupling of the rate, and that with the lessened output of the ventricles, stasis in the right chambers causes a dilation of the right auricle with a tricuspid incompetency, the presence of this venous pulse is readily accounted for. Hoffman and Hirschfelder have given exceptional tracings in which a distinct tracing from the jugular gives an auricular contraction preceding each ventricular contraction. Further during periods of return to normal rhythm of the ventricle, the auricle maintained its rapid rate. This fact is most important in explaining paroxysmal tachycardia. In mammals it has long been shown that under certain conditions, if rapid rhythmic stimuli are sent into the sinus, they are quickly transmitted to the auricle, and then to the ventricle, if the inhibitory vagus influence is removed, or if the irritability of the heart is increased. In response to such rapid stimuli in the sinus, only alternate shocks are responded to in many instances. This may be because (1) the irritability of the heart muscles lessened after each contraction, and has no time to recover, or (2) the contractility of the heart muscle itself is slow to readjust itself to meet the next stimulus, or (3) there is a sino-auricular, or auriculo-ventricular block. With these facts in mind it can be seen that stimuli arising in the sinus, where all heart beats begin, may be rapid normally, but only every other one may be responded to. But when certain toxic substances, or nervous influences set up the rapid stimulation in the sinus, and the vagus is paralyzed, and the heart muscle transmits every stimulus, then tachycardia results. But this question is far from settled and

arguments can be brought against every explanation so far advanced. What we need is more careful observations, and accurate jugular tracings in cases of tachycardia, preceding, during and after the attacks. To treat this form of arhythmia many methods have been employed. Such patients should lead a quiet life, guarded from hard work, nervous influences, and such excitement which might induce hysterical or nervous attacks. Tobacco, coffee, alcohol, and all excesses must be prohibited. Reflex disturbances, dilated stomach, constipation, et cetera, must be treated. Almost every drug that affects the intra- or extracardiac mechanism has been employed, but I feel sure that they all hark back to their immediate or reflex action as stimulators of the vagus. Pressure in the course of the vagus in the neck, galvanism, deep inspiration, ice bag, digitalis, strychnia, and aconite for its sure stimulating effect on the vagus, may all be tried in these cases. In my few cases I have always found that morphin soon cuts short the attack, whether it acts as a nerve sedative, decreases the irritability of the accelerators, or diminishes muscle conductivity cannot be definitely stated. Suffice to say that its employment during paroxysms, and treatment directed toward a suspected etiology is a rational plan to pursue. The outlook for these cases is not good as a rule, especially when these attacks occur with increasing frequency and become more prolonged each time. Cardiac incompensation follows, the patients become bedridden, and usually die of some complication or collapse due to cardiac asthenia.

There are other forms of cardiac arhythmias that I have not discussed here, because of their rarity, and the uncertain knowledge of their cause and origin. I have purposely omitted these irregularities that result from cardiac incompetency following the valvular insufficiencies. They have a totally different origin and do not enter into the discussion in this field of cardiac pathology. No branch in medicine offers a more fascinating and ever widening field for clinical investigation, and for careful diagnosis than the one I have brought to your attention. By careful graphic records alone can the subject be studied.

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Medicine is a noble art to study, and its practice is certainly elevating; but, when even a bare living is not realized from it, it certainly becomes very depressing.

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The management of skin diseases is perhaps as essential as their treatment. The proper diet takes first place among these measures and the avoidance of all those external as well as internal irritating influences of any nature is a very good adjuvant.

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Physicians must be on the alert more than ever, in view of the fact that so many diseases of the tropics are brought to this country by soldiers who have served in our island possessions. This is especially true of skin diseases which, at first, appear so puzzling.

When an eruption is in the form of red or scarlet spots, streaks or small papules, no matter where located on the surface of the skin, pass the finger over it. If it remains unaltered you most probably have a case of purpura hemorrhagica.

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If the skin itches first look for parasites, animal or vegetable. If neither be present examine carefully to determine what the disease is and then to find its cause. The treatment will easily suggest itself.

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In all cases of mycotic diseases of the skin it is better and more certain to make a microscopic examination. The necessary dexterity to prepare the specimen and mount it properly is easily acquired, the only difficult part being the quick detection and recognition of the fungus.—*Am. J. Derm.*

**The Journal of the Michigan State Medical Society**

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OCTOBER

## Editorial

**Honesty and Business Integrity in Those Who Supply Physicians With Drugs.** A third great work which the American Medical Association has taken up and a feature which markedly characterizes the new era of medicine, is that which has for its object the safeguarding of the physician in his use of medicines and other supplies, by keeping him informed regarding the difference between labels and contents. So much has been written concerning the work of the Council on Pharmacy that it is superfluous to review here the splendid reports which have been from time to time published. The council has, naturally, been bitterly attacked, but it is difficult to conceive how any physician, not connected with the proprietary medical interests or with medical journals whose life blood they are, can for a moment, fail to appreciate what this movement has done for him or be backward in giving it his hearty support.

The history of the establishment of the Council on Pharmacy is interesting. In 1900 a proposition was made to create a body to be called a Board of Control, to be composed of pharmacists and chemists, which should pass on all advertisements of medicines offered to the *Journal of the American Medical Association,* but at that time the plan was not considered feasible. It is to the glory of our own state society that it took the initiative in again bringing up the idea. At our annual meeting held in Grand Rapids, in May, 1904, the following resolutions were passed:

*Whereas,* an exact knowledge of the composition and properties of substances used in the management of disease is essential to a physician's best success;

*Whereas,* commercial push, by advertisements and drummers, persuades many physicians (often the very elect) to use and commend drugs, mineral waters, artificial foods, etc., etc., of unknown composition and effects;

*Whereas,* as it is impossible for the individual physician to verify the statements of the sales agents, to separate fact from fancy, he often uses substances quite unlike those indicated, to the discredit of himself and his art;

*Whereas,* the American Medical Association was organized to promote the exact knowledge and intelligence of its members;

*Resolved,* that the Board of Trustees, A. M. A., is hereby instructed to provide for the analysis of medicinal substances of unknown composition and undetermined effects and to promptly publish the results in the Association Journal.

*Resolved,* that the Board of Trustees, A. M. A., be instructed to appoint a "Journal Clearing House Commission," three in number, to serve without salary, with the authority to employ one or more experts, and to equip a suitable laboratory, at a yearly expense not to exceed five thousand dollars."

These resolutions were presented to the House of Delegates of the A. M. A., at its meeting in Atlantic City the following month, and were rejected. At the meeting, however, of the Board of Trustees, held in February, 1905, they were again considered. To quote from the report of the board: "After giving the matter full consideration, the Board tentatively created a body to be called the Council on Pharmacy and Chemistry of the American Medical Association, combining in this the principle recommended by the Michigan State Medical

Society with that underlying the proposition to create a 'Board of Control' five years ago."

It is now three and one-half years since the Council began its work and during this time probably 500 articles have been investigated, something over 300 of which have been found to conform to reasonable rules and have been put upon the approved list.

We may rest assured that no honest preparation will suffer at the hands of the Council. All it seeks to determine is: Is the preparation honest? Is its composition what its proprietors claim it to be? Are the statements made by the proprietors in reference to the preparation at variance with the facts?

Every physician who wishes to prescribe intelligently and honestly should have at hand copies both of "The Propaganda for Reform in Proprietary Remedies" and "New and Non-Official Remedies." They may be obtained by writing the American Medical Association, 103 Dearborn avenue, Chicago.

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**Recompense for Cows Slaughtered on Account of Tuberculosis.** An opportunity offers this fall for medical societies and individual practitioners to further some much needed legislation. Every physician understands the desirability of eliminating tuberculosis in dairy cattle, but few, perhaps, are aware of the reason why progress along this line has been so very slow in Michigan. Our sanitary authorities are not lacking in enterprise and ability, nor our dairymen in intelligence, and it may seem surprising that no active measures are being carried out on the part of either to mitigate what all know to be a serious evil. The trouble lies in the fact that our statutes, unlike the more enlightened ones of New York, Pennsylvania and Minnesota, for instance, do not offer to the owner any adequate compensation for animals slaughtered because of tubercular infection. It is common knowledge that cattle with localized tuberculosis, or even with fairly well advanced pulmonary disease, are often healthy looking and good milk producers. Furthermore, if the disease once gets a good start in a herd, it is not uncommon for almost every cow to be infected. The only satisfactory test for tuberculosis in cattle is the use of tuberculin, yet every dairyman nowadays knows that many animals with localized or healed lesions, and a few with no discoverable lesions whatever, will react to it. Under these circumstances it is not at all surprising that the owner of a herd of good milch cows should be unwilling to subject them to the tuberculin test and face the possibility of having most of them slaughtered, as the law requires if they react, and thereby suffering a serious financial loss, for which he can get no recompense. It is true that it is to the interest of cattle owners to get rid of tuberculous cattle; but it is still more to the interest of the community at large, and it is only fair that it should bear the greater part of the expense involved. The statutes of the states above mentioned provide for appraisal of all cattle before the application of the test, and remuneration of the owner for slaughtered animals on a scale varying according to conditions found post mortem. Experience has shown that the owners of herds are glad to avail themselves of the opportunity thus given to get rid of infected animals.

Some sanitarians and physicians in Michigan who are interested in this subject have joined with influential men allied with the dairy interests in an effort to secure the passage in this state of a statute similar to those of New York and Minnesota, and a bill drafted by men thoroughly conversant with all phases of the situation will be introduced in the coming session of the legislature. It seems probable that it can be

carried; but some educational work will be necessary, and it is hoped that medical societies and physicians through the state will use their powers of persuasion upon members of the legislature and candidates for membership as to the great desirability of such a law.

♣ ♣ ♣

**Recreation for physicians** is sometimes thought to be fraught with great difficulty, not to say danger to their reputation and dignity. The old-time doctors and many of the modern profession hesitate to go away on a vacation, for fear of losing practice or being criticized for inattention to duty. There is, however, a growing class of physicians who recognize the necessity of recreation and make it a point to create opportunity for it. We often hear a practitioner claim that he is so busy that he cannot get away; this is because he is either insincere or doesn't know how. Obstetric cases cause the greatest obstacle to vacations, but if a man desires, he can plan his vacation in advance and decline confinements likely to occur in that time. If he is tactful and firm in his refusal, he will be more respected, rather than less. If, in seeking recreation, a man retain his dignity, it is very likely that people will have a greater regard for him because of the very fact that he is able and independent enough to leave his practice.

It is undeniable that a physician ordinarily is benefitted by change of scene and occupation. The man who does not get away from work every year or two is in danger of "going stale" physically or mentally, or of being easy prey to illness, or becoming narrow in his outlook. He loses chances for the humanizing influence of contact with new people, places, and things.

It makes no difference whether a man lives in the city or the country, he is helped by a judicious amount of recreation. In the city, a physician has the opportunity for recreation snatched in spare hours, day by day, such as the theater, concerts, clubs, casinos, amusement parks, or various outdoor pastimes, as golf, tennis, boating, driving, baseball games, etc. In the country the means of diversion are less varied, but rural life on the other hand is more healthful, if less broadening.

It is of great value if a man has a hobby, which will occupy his mind when his professional duties are over; some men enjoy literary pursuits, others take to mechanical work, others to nature study, or to music and other arts. In fact, hobbies of physicians can be multiplied *ad infinitum.*

Occasionally a physician attains fame in his hobby; for instance, S. Weir Mitchell is a distinguished novelist; Billroth was renowned for his ability as a pianist. In Boston there has been a vocal organization composed of and conducted by physicians, who gave performances at certain medical gatherings.

It is not necessary to dwell upon the advantage of outdoor air and physical exercise to physicians, because they lead active lives, which take them much into the open air and change of scene. Many of the younger men, nevertheless, supplement this routine activity with regular exercise at golf, yachting, tennis, automobiling, handball, squash, racquets, curling, bowls, skating, cricket, etc. It is a thing to be encouraged, as is recognized by large hospitals, where modern management includes provision for athletic recreation for the internes.

Vacations may be spent in many ways, but probably two resources are most popular with doctors. One is to get away in the woods for camping, fishing, hunting, or simple relaxation. The other is to travel, including or not the visits to clinics, post-graduate courses, and other educational institutions. The object of a vacation is not always of neces-

sity to play; the same purpose is accomplished with men of certain disposition by a mere change of work, or work in new surroundings, with freedom from the ordinary worries of practice.

The point to be emphasized is that recreation is necessary; if it is not scattered along continuously in one's life, it should be taken in a lump by means of a vacation. A well-balanced man will desire to leave a change; he should recognize the desire and lay plans to satisfy it periodically, and by so doing he will return to his work with broader outlook, renewed interest, and the undiminished respect of his clientele.

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**New Appointments.** President Lawbaugh has appointed Dr. L. J. Hirschman, of Detroit, to fill the unexpired term of Dr. George Dock, as councilor of the first district.

A new Committee on Tuberculosis has been appointed as follows: Dr. H. J. Hartz, Detroit, chairman; Dr. Collins H. Johnston, Grand Rapids; Drs. E. L. Shurly and P. M. Hickey, Detroit; A. S. Warthin, Ann Arbor; A. W. Crane, Kalamazoo; F. McD. Harkin, Marquette.

The Committee to Study the Subject of Medical Defense consists of Dr. F. B. Tibbals, Detroit; Drs. A. M. Hume, Owosso; A. H. Rockwell, Kalamazoo; W. J. Dubois, Grand Rapids, and H. A. Hornbogen, Marquette.

Dr. E. T. Abrams, Dollar Boy, is the new member of the Committee on Legislation and Public Policy.

Dr. Flemming Carrow, Detroit, is the new member of the Committee on Medical Education.

## Book Notices

**Treatment of Internal Disease for Physicians and Students.** By Dr. Norbert Ortner, of the University of Vienna. Edited by Nathaniel Bowditch Potter, M. D., Visiting Physician to the New York City Hospital. Translated by Frederick H. Bartlett, M. D., from the fourth German Edition. Cloth; pp. 658. Price $5.00. J. B. Lippincott, Philadelphia, 1908.

This volume is a translation from the last, the fourth edition, of Ortner's Lectures upon the "Therapy of Internal Disease." As the title indicates, it is devoted to treatment. Very little is said concerning prophylaxis and only such reference is made to the pathological physiology of disease as the author considers essential to rational treatment. Special stress is laid upon mechanical, dietetic, climatic, hydro-therapeutic and other extra medical measures. There is more than the usual discussion of the applicability of drugs, as the author says, "with the hope of making medication less an affair of memory and more of reason." The number and variety of drugs, especially the newer German synthetics, shows that the author is no therapeutic nihilist. The reviewer's one criticism is upon the profusion of prescriptions and the apparent perfect trust in so many drugs.

The prescriptions have been altered to conform to the American pharmacopeia, and the equivalents in the English scale of measures have been added to the metric quantities. References in climatology, hygiene, and dietetics have been adapted to the local needs. There is a classification of mineral waters to which has been added tables of corresponding American waters. The criticisms and suggestions by the editor are sufficient.

This volume is not a text book, but contains much that is well suited to assist the practitioner in working out the details of symptomatic treatment.

**Diseases of the Intestines and Peritoneum.** By Dr. Herrmann Nothnagel, of Vienna. Edited, with additions, by H. D. Rolleston, M. D., F. R. C. P., Physician to St. George's Hospital, London, England. Second Edition. Octavo of 1059 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, $5.00 net.

Few translations of German medical books have been more generally satisfactory than the series comprising Nothnagel's System. Twelve

of these volumes are now available in English; several are in the second edition. The fact that the various volumes may be purchased separately has made them especially popular.

In 1904 appeared Rolleston's translation of the section on "Diseases of the Intestines and Peritoneum." It was immediately accepted as the most complete monograph on the subject and its large sale made a second edition necessary. This opportunity has been taken to bring the work up to date, involving considerable additions to the text.

The book is a large one comprising over 1,000 pages, is printed on excellent paper and beautifully bound. The arrangement of the text is logical; reference is easy, made so by the arrangement and the excellent index. Throughout are many practical points on diagnosis and treatment as well as complete sections on etiology and pathology.

This second edition is even better than the first and is to be highly recommended.

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**Mortality Statistics, 1906.** Department of Commerce and Labor, Bureau of the Census, S. N. D. North, Director. Washington, Government Printing Office. 1908.

This volume deserves special notice. We are too prone to accept the official reports of our government employees as a matter of course and fail to give them credit for the painstaking work which they do. This report is the work of Dr. Cressy L. Wilbur, Chief Statistician for Vital Statistics, formerly of Lansing and still a member of our state society. Dr. Wilbur is struggling against enormous difficulties, but is, nevertheless, making great progress in his campaign toward accurate vital statistics.

The scope and limitations of the work are thus stated by the author:

"It is especially undesirable that invidious comparisons should be made, on the basis of crude death rates alone, whereby a certain city or state is proclaimed the 'healthiest' of any in a selected list. Carefully 'corrected' rates are necessary for satisfactory comparisons, and many elements of 'healthfulness' are involved that are quite incapable of expression in a single rate number. With all these limitations, however, the general rates given for the various states and cities have the merit of being obtained in a uniform manner, without elimination of various classes of deaths as often happens in municipal, and even in state reports, and upon a uniformly estimated basis of population; so that for general investigations of mortality, and especially for the study of the movement of disease in any locality from year to year, they will prove to be more satisfactory than any data that have been heretofore at the service of American sanitarians."

According to this report deaths from cancer are increasing with amazing rapidity. The number in the registration area rose from 20,847 in 1902 to 29,020 in 1906. Diseases of the kidney rose from 29,219 to 40,933 in the same period and deaths from apoplexy and paralysis from 28,536 to 36,367. It is pleasant to know that penumonia which has shown an apparent increase for some time, has begun to decrease, the rate having fallen from 124.5 per 100,000 living in 1902 to 110.8 in 1906. There were in 1906 4,673 deaths from appendicitis but this was less than the preceding year.

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### Books Received.

**A Practical Guide to the Examination of the Ear.** By Selden Spencer, instructor in Otology in Washington University. 5½x7½ in., 66 pages. C. V. Mosby Medical Book and Publishing Co., St. Louis, 1908.

**Health and Beauty.** By John V Shoemaker, LL. D., M. D., Professor of Materia Medica in the Medico-Chirurgical College of Philadelphia. 6½x9 in.; 476 pages. Cloth, $3.00 net. F. A. Davis Company, Philadelphia, 1908.

**The Cure of Rupture by Paraffin Injections.** By Charles C. Miller, M. D. 5x7 in.; 81 pages. Cloth, $1.00. Published by the author, Chicago, 1908.

**History of the Medical Society of the State of New York.** By James F. Walsh, M. D., LL. D. 5½x9 in.; 208 pages. Published by the Society, 1908.

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## County Society News

### Third District.

The annual meeting of the Third Councilor District was held in Battle Creek on October 6th. The scientific session, held in the afternoon, was

followed by a banquet. The officers chosen for the meeting were: Councilor, W. H. Haughey; chairman, Samuel Schultz, Coldwater; secretary, George C. Hafford, Albion; assistant secretary and chairman of the committee of arrangements, Wilfred Haughey, Battle Creek; committee of arrangements, C. E. Stewart, H. A. Powers, A. S. Kimball, Battle Creek; S. Schultz, Coldwater; L. L. Cahill, Mendon; A. H. Burleson, Olivet.

A complete report of the meeting will appear in the next issue of THE JOURNAL.

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### Livingston.

The annual meeting of the Livingston County Medical Society occurred on September 15, 1908. Dr. W. M. Donald, of Detroit, read a paper on "Vascular Degeneration," which brought out an excellent and helpful discussion.

The officers elected were: President, H. F. Sigler, Pinckney; vice-president, Jeanette Brigham, Howell; secretary-treasurer, R. H. Baird, Howell; directors, J. E. Browne, Howell; J. A. McGarvagh, Fowlerville; H. W. Hodges, Brighton; C. B. Erwin, Hartland; M. H. Coan, Brighton.

R. H. BAIRD, *Sec'y.*

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### St. Joseph.

St. Joseph County Medical Society held a regular meeting at Three Rivers September 3rd, 1908. Meeting was called to order by President L. K. Slote, of Constantine, promptly at 2 p. m.

Dr. W. H. Haughey, Battle Creek, District Councilor, was present and gave an interesting and encouraging talk.

The principal papers presented were Ochsner's Treatment for Appendicitis, The Calmette Test, and Suppurative Peritonitis. The subjects were well and earnestly discussed.

A committee, Dr. F. W. Clements, chairman, gave a report of the results of investigations made, relative to a common price-schedule for St. Joseph County, which was favorably received. The committee was instructed to continue the work and give a final report at the next meeting, which will be held at Sturgis, Tuesday, November 3rd, 1908.

L. L. CAHILL, *Sec'y.*

## News

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Dr. Max Ballin, of Detroit, has gone to Europe for a month.

Dr. C. D. Aaron, Dr. F. L. Newman, Dr. T. A. McGraw, Jr., Florence Huson, Dr. Jeanne Vernier, and Dr. W. E. Keane, of Detroit, have returned from European trips.

Dr. W. J. Wilson, of Detroit, and Dr. J. P. MacCarthy, of Kalamazoo, have been attending summer courses in medicine at Harvard Medical School.

The Hal C. Blair Hospital at Morenci was opened in July.

Dr. J. D. Crum has been appointed a member of the school board of Owosso; Dr. R. E. Skinner has been appointed to a similar position in Howell.

Dr. W. H. Sawyer's residence in Hillsdale was recently damaged considerably by fire.

Dr. Albert H. Eber, of St. Clair, has returned from P. I., where he has been in the U. S. service for three years.

The postoffice, drug and general store owned by Dr. L. C. Knight, of Riga, was recently destroyed by a fire that devastated a large part of the village.

Dr. W. H. Stevens, of Crystal Falls, has moved to Stambaugh.

Dr. Lehman, of Riga, has moved to Troy.

The Wayne County Medical Society and the Detroit Academy of Medicine have resumed their meetings, the former weekly, and the latter biweekly.

Dr. Herbert M. Rich is chairman of the Program Committee of the Wayne County Medical Society.

The Detroit College of Medicine began its 1908-09 session on Sept. 16th.

Dr. Jean C. Vernier and Dr. Minta P. Kemp, both of Detroit, spent their vacation traveling together in Europe.

Dr. J. D. Crum has been elected a member of the school board of Owosso.

St. Mary's Hospital, of Detroit, has established a laboratory for clinical diagnosis and research; the work will be under the supervision of Dr. E. H. Hayward, pathologist to St. Mary's, and Dr. C. S. Oakman, director of the Laboratory of Clinical Diagnosis of the Detroit College of Medicine.

Dr. A. B. McGregor has left Fowlerville and located in Aberdeen, Washington.

Dr. R. W. Kennedy, Superintendent of the State Hospital for Tuberculosis at Howell, has been granted a three months' leave of absence.

A dozen intimate friends of Dr. George Dock tendered him a farewell dinner in Detroit on September 14th. Dr. A. S. Warthin entertained in his honor at Ann Arbor on the evening of the 17th. Doctor Dock left to take up his new duties at Tulane University, New Orleans, September 20th.

Dr. Johann Flinterman has returned to Detroit after five months spent in Germany. A greater part of the time Dr. Flinterman was at Leipsig, where he daily attended clinics.

Dr. Walter Hewlett has been elected by the Regents to the Professorship of Medicine at the University, made vacant by the resignation of Dr. Dock. Doctor Hewlett obtained his A.B. at the University of California, did post graduate work at the University of Chicago and graduated in medicine at the Johns Hopkins Medical School. For two years he was with Krehl, later becoming Associate Professor of Medicine at Cooper Medical College in San Francisco.

The Milk Commission of the Kent County Medical Society, which has so successfully secured the establishment of a certified milk plant in the city, is composed of the following doctors: Dr. Collins H. Johnston, Chairman; Dr. W. H. Veenboer, Secretary and Bacteriologist; Drs. J. A. McColl, T. M. Koon and R. H. Spencer. The Sanitary Milk Co., of Grand Rapids, has sold what has been purported to be "certified milk" for the last two or three years, and charged 12c per quart for it. A number of samples of this milk have been examined by the Commission the past summer and have been found to contain from 100,000 to 400,000 bacteria to the cubic centimeter, while the limit of the Commission is 10,000. The Commission has, therefore, requested the Sanitary Company to discontinue the use of the word "certified," and intends to introduce a bill at the coming session of the State Legislature, making such use of the word unlawful. In the states of Kentucky and New York, the term "certified" can be applied only to such milk as has been passed upon by a Medical Milk Commission, supported by a regular medical society in good standing in the state. Such a law is needed in Michigan.

The Medical Department of the University of Michigan began its 1908-1909 session on Sept. 29.

Dr. Eugene Miller has been re-elected to the school board in Battle Creek.

Dr. H. N. Swaney, of Eagle, has sold his property and practice to Dr. Harold Hoover, of Alamo, and will go to California for a year of rest to recuperate his health.

The Grand Rapids Anti-Tuberculosis Society has established a free tuberculosis dispensary, which is open daily from 12 to 1 o'clock, and is run by the following Board of Physicians: Dr. Collins H. Johnston, Chairman; Drs. Ralph H. Spencer, Alden Williams, Thomas M. Koon, John F. Hastie, and A. J. Baker.

## Marriages

Daniel O'Brien, M. D., of Lapeer, to Miss Lucy Rickart, of Gaines, at Montrose, August 10.

## Deaths

W. E. Best, M. D., formerly of North Branch, died suddenly at his home in Cottage Grove, Ore., July 22.

Samuel E. Gillam, M. D., of St. Johns, died suddenly Aug. 13 from heart disease while fishing in a launch on White Lake, aged 63. Dr. Gillam was an ex-president of the Clinton County Medical Society, a former surgeon of the Detroit, Grand Haven & Milwaukee R. R., and president of the local board of U. S. Pension Examiners.

Gilbert E. Corbin, M. D., a physician and dentist of St. Johns, died at his home Aug. 6, from heart disease, aged 77.

Benjamin Douty Ashton, M. D., of Traverse

City, died at his home, Aug. 6, from cerebral hemorrhage, aged 79.

Dr. Chester S. Gitchell, of Hobart, died at his home, June 26, 1908, from angina pectoris, aged 73.

William T. Eckley, M. D., of Grand Haven, a retired physician, died September 12, from heart disease, aged 53.

Dr. Le Grande Wheeler, an old practitioner of Muskegon county, died at his home in Wolf Lake, aged 76.

Henry A. Dawley, M. D., of Lansing, formerly of Williamston, died recently.

## Obituary

### George Kinney Johnson, M. D.

Dr. George K. Johnson, President of the Michigan State Medical Society in 1879, died at his home in Grand Rapids, September 3, 1908, aged 86 years. Equipped with gifts, both mental and temperamental, which qualified him to be a leader and at the same time a servant of his fellows, his services to both city, state and country have been such as will not soon be forgotten.

Dr. Johnson was born in Cayuga County, New York, January 17, 1820. He came to Michigan at the age of four, his parents settling in Brighton, Livingston County. The country was new and wild and his boyhood experiences Dr. Johnson always regarded as the most wholesome of his life.

At 18 years of age, Dr. Johnson resolved to get an education. Schools were few in those days and difficulties were great. The university at Ann Arbor was not then in existence, but an old academy known as the McNiel academy, was located in Ann Arbor, and this he attended for two or three years and was there at the time of the laying of the corner stone of the Michigan University.

Having obtained what professional knowledge the school then had to impart, he entered, at the age of 21, the office of Dr. Ira Bingham at Brighton, and began the study of medicine with this teacher. Dr. Bingham was a brusque old bachelor, but well instructed and successful in his practice. He took great pains with the young men whom he admitted into his office.

In March, 1848, Dr. Johnson received his degree in medicine from the Cleveland Medical College and the following June began his first professional work in Pontiac. In a few years his practice grew to extend over large portions of Oakland county, and in the excess of his labors his health began to fail. In 1852 he moved to Detroit and undertook light practice, but still remained in poor health and in 1856, being unable to continue in the work of his profession, he went to Grand Rapids in the interests of the Detroit & Milwaukee railroad, then in course of construction, and in which some of his friends were largely interested. In 1857 he spent several months in England, partly in pursuit of health and partly in the interest of the road referred to.

Returning to Grand Rapids he became interested in politics and in the spring of 1859 was elected mayor of the city on the Democratic ticket. He served one term, but declined to be again a candidate.

In 1860 Dr. Johnson had so far regained his health that he was again enabled to take up his practice. The following year, however, the civil war broke out and he left home to become surgeon of the First Michigan cavalry. He served with it during the exciting campaign of General Banks in the valley of the Shenandoah and later in the same season he served as medical director of a brigade of cavalry, commanded by Gen. John Buford, in the stirring but unfortunate campaign of General Pope. He was at Second Bull Run, where his intimate friend, Colonel Brodhead, the commander of his regiment, met his death.

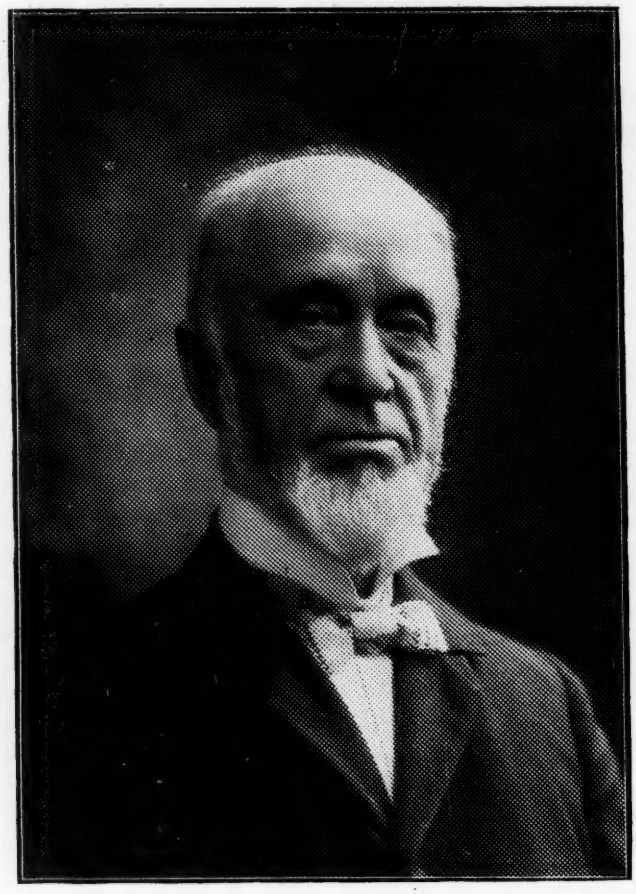
In February, 1863, congress created a corps of medical inspectors of the army, with increased rank. It consisted of eight inspectors, four of whom were taken from the regular service and four from the volunteer service. Dr. Johnson was commissioned one of the four from the latter and was at once assigned to duty with the army of the Potomac, and was in service during the campaigns of 1863. He was present at the battles of Chancellorsville, Gettysburg, and others. From 1863 to 1865 he was inspector of the Middle Military Department and as such had the laborious and responsible duty of inspecting field and general hospitals of the large department, extending from Philadelphia to New Berne, N. C.

In November, 1865, after a military service of four years and four months, Dr. Johnson returned to Grand Rapids, at once resuming his practice.

For many years Dr. Johnson was active in medical society work, both in the local, state and national organizations. At the time of his death, he was an honorary member of the Kent County Society and of the State Society.

By reason of his army service he held membership in the Society of the Army of the Potomac and in the Order of the Loyal Legion of America. Dr. Johnson was appointed pension examining surgeon of Grand Rapids shortly after the war, and was the only surgeon on that service in the city until the Grand Rapids board was organized, after which he was president of the board for a number of years. He was also chief of the staff and consulting surgeon to Butterworth hospital, and was a communicant at St. Mark's church.

In the death of Dr. Johnson, the profession of Grand Rapids and Michigan loses one of its leading members and medical organization one of its staunchest advocates.



George Kinney Johnson, M. D.

**Resolutions Passed by the Kent County Society.**

At a meeting of the Kent County Medical Society, held September 11, 1908, to take action in reference to the death of Dr. George K. Johnson, the following resolutions were adopted:

*Whereas,* it has pleased Almighty God to take

from among us one who has for many years been a personal friend and who has for more than sixty years been closely identified with the medical, surgical and sanitary history of Grand Rapids, and who has always stood for their uplift, we cannot but place on record our deep sense of loss at his departure and seek to express (if language can express) the bereavement we now feel at the loss of one whom we have so long looked to for counsel and advice.

We sympathize with the members of his bereaved family, that they have been bereft of so gracious and loving a presence, and yet while we sorrow and bow in submission to the will of our gratitude that it was given to Dr. Johnson to round out a longer life of usefulness than is given to most men. We offer a prayer that the membership of Kent County Society and the medical profession at large may emulate the example he has set for us.

..*Resolved,* that the secretary of the society spread upon the minutes this action and send a copy to the family of the deceased and to our State Journal.

RALPH H. SPENCER,
D. EMMETT WELSH,
F. J. LEE,
Committee.

A true Copy:
F. C. WARNSHUIS, Secretary.

## Correspondence.

Benton Harbor, September 17, 1908.

To the Editor:—

I wish to tell the readers of THE JOURNAL a little story and ask the ideas of any who may feel themselves able and inclined to give them.

On a cold spring Sunday morning in 1902, upon my return from a country trip, I was told that a man had been shot and was bleeding to death because no physician would go to see him. I asked where the phone dispatch came from and immediately called up the parties. The man said these were the facts and added some things about the physicians of this city that it is not necessary for me to give here. I told him who I was and asked if I could be of any service and he seemed glad, and urged me to come at once. I went and found a young man of about 19 years of age lying in a pool of blood on a kitchen floor in a little, illy furnished house of the Nickle Library kind. His right arm had been shot off near the shoulder joint and a gaping wound about the size of the palm of the hand from which protruded torn flesh and the ends of the bone showed what I had to deal with. After getting assistance we took him to the hospital and dressed his wound.

Immediately I made inquiries about the people. I found the man was a carpenter, an old soldier and a paralytic. The wife and only daughter—the boy was an only son—were under the care of a physician at the time. I found the man could not or did not pay his bills. The proprietor of our local collecting agency said he was "the limit." So I sent word to the supervisor of Benton Township, one of the richest townships in the state—at once, and told him of the case and requested immediate instructions. In two weeks he came to my office and, in the presence of my office girl, authorized me to attend the case on behalf of the township.

This I did until notified by him three months later that the township would not pay the bill. I was told by some of our leading citizens in this city that the township would not pay the bill, whether authorized or not, but would not believe they could be guilty of such perfidy.

For about a year I tried to get some sort of a chance to settle the matter amicably but got nothing but discourtesy, and finally commenced suit. At the trial the supervisor denied ever having authorized the treatment, but his attorney contended that this did not matter, because the party was not a pauper and the township could not be holden. The judge charged the jury first, that if they found the supervisor authorized the attendance they were to find for me—the plaintiff—but if they, second, found that the party could have paid the bill, then or within a reasonable time thereafter—they were to find for the defense. In other words the grocer and the doctor—no matter what the emergency—must either find for himself that the supervisor does not exceed his authority in the matter or get the orders of the township board before proceeding.

The township have had a little taste of the application of this rule since this case was tried, for, whereas my case made a good recovery and the young man is able to earn a good salary now as a carpenter, a case of simple fracture has

since occurred in a township charge and the neglect to which it was subjected resulted in the loss of a leg, I am told.

I write this letter to get some ideas on the outcome of my case if possible, for I have appealed the case to the Supreme Court and the township of Benton is going to pay that bill to me or my lawyers if I can make it do so. If any one has had a like experience I would be pleased to hear from them.

Fred R. Belknap.

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Philadelphia, Oct. 1, 1908.

Secretary, Michigan State Medical Society,
Detroit, Mich.

Dear Sir—The Board of Public Instruction in Medical Matters, which was established a year ago by the American Medical Association, will have as one of its most important duties the organization and development of a system of popular lectures on medical matters. These lectures, as stated by the Chairman of the Board, Dr. John G. Clark, in his report to the House of Delegates, are to be given under the auspices of the American Medical Association, both directly and through the state and county medical societies. It is proposed that a general plan be prepared by the Board, to which the courses in different parts of the country may conform, with such modifications as specific local conditions may render advisable. Such a plan, which will in the main follow the lines of the provisional programme for published articles contained in the chairman's report, is now in preparation.

As the plan has already been tried in some of the large cities it may be said to have passed the experimental state, and its educational value is splendidly illustrated by the effective work done in a special line by the official lecturer of the National Association, Dr. McCormack.

It is hoped that the preliminary organization can be completed during the summer, so that the actual work may be begun in the fall. The expenses, which need not be large, will be met by the individual societies. The Chairman suggests that as soon as possible, the Presidents of the State and County Societies appoint a Committee on Public Lectures, who will co-operate with the medical societies of their own state and with the National Association through the Board of Public Instruction, in organizing this work.

Very truly yours,
R. MAX GOEFF,
Sec'y Board of Public Instruction.

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The *Detroit Free Press*, October 4, 1908, says editorially: Rudyard Kipling has been praising the doctors. In the epigrammatic fashion for which he has become famous he has told them many things about themselves that would make any one else blush. But the doctors have heard them before.

Most people will agree with his nice words. Almost all of us think highly of the doctors. We owe them our lives, some of us. Others of us owe them money, too, but the doctors do not mind that. They seem to be just as cheerful over saving the life of a debtor as they are when a cash patient recovers.

It might be pointed out, however, that Mr. Kipling has come into conflict with the authorities in one of his sayings. "There are only two classes of mankind in the world—patients and doctors," he told the graduating class of the London Medical school. The wisdom of the proverb is against his conclusion. "At forty," the proverb runs, "every man is a physician or a fool."

Apart from this unimportant bit of criticism, surely no one can find fault with the author's words of praise. The doctors do far more good to mankind than merely healing bodies. They are the saving grace of our civilization. Have we another profession or a trade that so uniformly works for others and with so little thought of self?

Living in the world and active in its affairs, they are as much set apart for its service as the monks of old. Day or night, sick or well, they are at the beck and call of the sufferer. Where other workers seek to lessen their hours of toil or to raise the rate of pay, these laborers know no time for rest and devise no corners to increase their compensation.

Perhaps the day will come when the world can do without the doctors, reaching that state of wisdom when it will not contract disease. If such a golden age ever arrives on earth, surely one of its inspiring traditions will be the lives of the physicians who did so much for humanity in these less happy times.

# Progress of Medical Science

## MEDICINE.

Conducted by

T. B. COOLEY, M. D.

**Influenza and Influenzal Pneumonia.**—DAVIS has made a bacteriological study of these diseases as they occurred in the epidemic of 1905 and 1908 in Chicago, which has led to some interesting results. The cases of influenza corresponded clinically very closely to the type observed in the pandemic of 1889, and the general conception among physicians was that of an infection with the influenza bacillus. In all, during the two epidemics, 40 cases were studied bacteriologically. In only 7 of these were influenza bacilli found at the outset, and in these they were not numerous. Streptococci were found in every case, and usually in greater numbers than in the normal throat. Pneumococci were always present in great numbers, in most of the severe cases being found a number of times, and streptococcus mucosus in four cases.

Later in the disease and especially with the appearance of complications, the bacteriology is more complex, various organisms appearing as secondary invaders. Of these, the *streptococcus pyogenes* and *streptococcus mucosus* both seemed important in relation to complications, *streptococcus mucosus* being particularly prone to invade the eustachian tube and middle ear. Organisms of the type of m. catarrhalis were quite common. The influenza bacillus obviously had no great part in the causation of the primary disease or its complications in these epidemics. If one is to assume a single causative organism in every epidemic, the cause of grip is unknown. It seems more rational, however, to assume that the same clinical condition may be produced by a variety of organisms, and that the underlying factor which stimulates their development must be sought in climatic or other conditions.

Forty-two cases of the type of lobular pneumonia commonly known as "grip pneumonia," with symptoms so similar as to suggest a common cause were studied. Influenza bacilli were usually not found in the earlier stages, while pneumococci and streptococci were common. The influenza bacillus might appear suddenly without any corresponding change in clinical condition. M. catarrhalis was found only occasionally and never predominating.

The author studied also the frequency of occurrence of the influenza bacillus in the sputum in other affections of the respiratory tract, such as pertussis, measles, lobar pneumonia, etc., and presents a table showing it to be very common in many of them, especially pertussis, varicella, measles, and pulmonary tuberculosis.

The author's conclusions are as follows:

1. In many epidemics of clinical influenza or grip the influenza bacillus plays little or no part as an etiologic organism.

2. The epidemics appear to be due to a variety of organisms—the *Pneumococcus, Streptococcus Pyogenes, Streptococcus Mucosus, and Micrococcus Catarrhalis* being most commonly found in the secretions. An organism morphologically and culturally identical with meningococcus was found in one case.

3. Complications following these cases are often serious and usually due to *Pneumococcus, Streptococcus Pyogenes, and Streptococcus Mucosus.*

4. The influenza bacillus is often found in so-called influenzal pneumonia, but not in all cases. It cannot be considered the primary cause. An abundant mixed bacterial flora is characteristic of the respiratory secretions in these cases.

5. Influenza bacilli are commonly found in a great variety of infections.

6. Experiments both on animals and human beings demonstrate that these bacilli possess pathogenic properties. They are often, or at least, sometimes, non-virulent as they occur in the secretions.

7. As secondary invaders they undoubtedly influence unfavorably other primary infections.—*Arch. Int. Med.*, Sept., 1908.

## SURGERY

**Conducted by**

C. S. OAKMAN, M. D.

**A Criticism of the Treatment of Acute Suppurative Infections by Passive Hypermia and Cupping as Advocated by Professor Bier.**—Dr. L. Wrede, of Koenigsburg, contends that inflammation is not purely a weapon of defense against bacteria, but is a complex manifestation of bacterial attack and bodily reaction; that Bier's effort to increase inflammation is liable to increase the injury to tissues caused by infection. For instance, in an increasing infection the blood-stream is slowed until thrombosis results; if artificial stasis is induced in such cases, thrombosis is accelerated and made worse. He holds, with Lexer, that intensification of inflammation causes added destruction of tissue, and quotes the experiments of Frangenheim, which showed increased liquefaction after treatment by the cupping glass.

Moreover, he insists that the nature of infectious processes is such that no one can predict their course or their limitations; that in severe cases some patients will not show any power to increase the inflammation, though destruction of tissue progresses apace; that in cases of uncertain extent and severity one does not know, in using the Bier treatment, whether or not it is going to suffice; if it does not, so much more harm has already been done, whereas by the old methods one knows at once the extent and severity of the infection and is certain how to proceed. He maintains that the Bier treatment is comparable to internal medicine, in that it places the burden of cure upon the body, which must itself destroy the bacteria and their toxins; constricting bandages and suction cups are the agents to bring this about, but it is an indirect method, as compared with the old method, which instantly conducts all germs and necrotic products to the surface and leaves the body only the duties of repair. As to the favorable effects of edema, as claimed by Bier's adherents, the author contends that there are cogent arguments against its efficacy; first, because it may easily impede the capillary circulation; second, because the soluble products of inflammation are spread all over the edematous area; third, because these products, when the constricting bandage is removed, are suddenly thrown into the general circulation in a large dose, and may give rise to systemic manifestations, not to say effects upon important viscera.

The author believes that acute inflammations are best treated by the old methods of prompt, judicious incision, and adequate drainage, because of the greater certainty and wider applicability. *Surgery, Gynecology and Obstetrics,* Sept., 1908.

**Twenty-five Hundred Cases of Gas-Ether Anesthesia Without Complication.**—Van Kaathoven, of Philadelphia, reports upon the use of gas-ether sequence and recommends it for routine work. The importance of the anesthesia is not widely enough appreciated, and it is too often left to inexperienced persons, because of a contempt for its seriousness. Statistics concerning complications are difficult to weigh correctly and each series must be judged according to circumstances. Complete surgical narcosis means "that degree of sensory and motor depression required to enable the surgeon to complete his operation unhampered,* * * and not one whit more." This state will vary greatly with different individuals and the signs of it are not always easy to determine. The pupil is a good guide at times, but in over 85 per cent of cases it is unreliable. On the whole, the one best guide is the breathing; close observation of the rhythm, depth, and sound is the surest means of estimating the degree of narcosis. The author condemns the habit of watching the operation while anesthetizing; the keeping the patient at the right point necessitates undivided attention. He uses nitrous oxide as a preliminary, because of its safety, rapidity, and agreeableness to the patient; its disadvantage is that it sometimes increases mucous secretion; he recommends the preliminary injection of morphine and atropine. If mucus appears in spite of this, he cautions against over-anesthesia, and swabbing with gauze; the proper way is to raise the shoulders, turn the head on one side, and allow the secretions to drain out. He advocates the drop-gauze method of giving ether. Plethoric and alcoholic patients require especial care and skill; they sometimes require a change to chloroform. The gas-ether sequence reduces the amount of nausea, shock, and apprehension.—*Annals of Surgery,* Sept., 1908.

## GYNECOLOGY AND OBSTETRICS.

**Conducted by**

B. R. SCHENCK, M. D.

**The Time to Operate in Intra-Abdominal Hemorrhage Due to Tubal Pregnancy.** At the last meeting of the American Gynecological Society, an important series of papers was read on the treatment of extra-uterine pregnancy. Manton, of Detroit, considered five conditions as follows:

1. The fulminating cases, with excessive hemorrhage from rupture of the tube or expulsion of the ovum from the ostium abdominale, with profound shock and collapse. 2. Those in which there are repeated attacks of pain, with faintness, vomiting and shock, but without excessive bleeding, as in tubal abortion. 3. Those in which rupture has occurred and a hematocele has been walled off from the general peritoneal cavity. 4. Those in which the blood has been more or less absorbed, the products of conception and exudate remaining. 5. Those in which the products of conception have escaped from the tube and continue to develop. In determining the course to be pursued when hemorrhage has occurred, rare judgment, fortified by experience, is essential. Accumulated experience demonstrates that if there is free blood in the peritoneal cavity the sooner an operation is undertaken the better the chances for rescuing the patient. The management of this condition demonstrates literally that "the man that wandereth out of the way of understanding shall remain in the congregation of the dead." Manton's paper will be found in the *American Journal of Obstetrics,* July, 1908.

Robb, of Cleveland, presented the subject in a somewhat different way. Attempts were made to cause lesions in dogs which would correspond in severity to those present in cases of ruptured ectopic pregnancies in women. Assuming that in these experiments conditions were produced similar to those occurring in ruptured ectopic pregnancies in women, the results suggested the following conclusions, as being worthy of consideration: 1. A woman suffering from a ruptured ectopic pregnancy does not die from the hemorrhage itself. Death was caused by hemorrhage and shock which might be increased by various procedures. 2. An immediate operation might add shock to shock and so prevent recovery. 3. The hemorrhage ceases in from 15 to 20 minutes. The fact that the hemoglobin remained stationary showed that clotting had taken place. A hemorrhage that had ceased might be started up by manipulation of the tissues, and might thus be mistaken for a continuing hemorrhage. 4. The subcutaneous injection of salt improves the pulse and respiration and does not start the hemorrhage up again. 5. The use of bandages or proper weights by which the abdominal walls were approximated was likely to improve the condition of these patients.

**Inequality of the Two Breasts.** Variot and Lassabliere examined the breasts of 550 French women who sought employment as wet nurses in Paris. Inequality was found to be the rule (75 per cent). Generally the left breast was the larger. They milked 40 women dry, and the difference in the amounts of milk obtained from the large and from the small breasts ranged from 40 to 335 cubic centimeters. But it does not seem so easy to account for differences in the quality of the milk from the two breasts. The smaller gland, they find, yields milk richer in fat and casein, but somewhat defective in sugar. As a consequence, the baby is inclined to avoid the little breast, and that leads to a still greater reduction of its size, so that sometimes it undergoes such a degree of atrophy that the nurse is left with only one available breast. The authors state that this inequality of the breasts as regards size exists in young girls as well as in nursing women. This fact they set down as probably due to heredity, but they add that in the nurses examined by them the difference in the size of the breasts was manifestly due to the greater frequency with which, for reasons of convenience, the women gave the left breast to the child. It ought to be corrected, and the best way to secure that result is to insist on giving the infant the lesser breast.—*Semaine Medicale,* Aug. 5, 1905.

## NEUROLOGY.

**Conducted by**

C. W. HITCHCOCK, M. D.

**Morbid Somnolence.**—"Our present state of knowledge or lack of it, concerning morbid somnolence justifies," Dr. D. Orsay Hecht believes, his report of a case: The patient, a colored man, 48 years of age, seen first in October, 1906, whose essential complaint was his inability to keep awake. He exhibited a very moderate dyspnea, occasional fleeting pains about the heart, slight periodic headaches, large appetite, inordinate thirst, frequent micturition at night, about 4 per cent of albumin in his urine, and a slightly displaced heart. He was rather obese, having weighed for 25 years between 200 and 260 lbs. His drowsiness gave rise to the suspicion of intra-cranial luetic lesion and his history of a syphilis at 18, which had been indifferently treated and had caused an illness of a year's duration, together with two barren marriages, does not help to clear the suspicion. He, however, attributes to a severe attack of la grippe at 40, his present trouble.

Since 1895, his sleeping spells have annoyed him. He has gone to sleep when making a bed, and again when in conversation, and finally so frequent were his lapses into sleep that he was called "Sleepy Bill," and was forced to give up his regular work. He exhibited an unconquerable desire once in about 3 hours to doze, if undisturbed, for from ½ to 1 hour. Keeping constantly on the move alone could keep him awake.

At church he falls asleep, but hears the sermon, and only knows that he has been asleep when told so. Its onset is sudden. An examination of the nervous system points to some possible organic impairment, but does not satisfactorily account for his sleep attacks. The literature of such conditions is rather meager. The essential forms are classified thus: (1) Epileptoid sleeping states; (2) Hysteroid sleeping states: (a) spontaneous "mesmeric" sleep, (b) trance and lethargic states; (3) Morbid somnolence, the expression of a distinct neurosis (narcolepsy). Two authors hazard the belief that sleep attacks constitute one of the phenomena of degeneracy, while others affirm an autotoxic pathogenesis. The sleep tendencies of exhaustion, obesity, organic cerebral disease, and diabetes and the toxemias of malarial, uremic, cholemic and syphilitic disease, are, of course, well known.

In this case the evidence of past syphilis, the presence in a mild degree of renal disease, and the element of obesity seem in combination to offer a possible explanation for the attacks, tho' it is thought that the case is best presented as one of morbid somnolence.—*Amer. Jour. Med. Sci.* for March, 1908.

**A New Sign for Detection of Malingering and Functional Paresis of Lower Extremities.**—An interesting and important test is presented herewith: If a normal person be asked to lift an extended leg (while in the recumbent position) from a couch, there will be complemental oppositional pressure of the other heel, which will dig into the couch when the free act of raising the extended limb is attempted.

The same opposition is present if a genuinely paretic patient be asked to raise the paretic leg. If this patient be asked to lift the normal leg against resistance an oppositional pressure is developed in the paretic leg proportional to the voluntary power of which the patient is capable, in this paretic extremity.

In two cases of alleged paresis of one leg, when resistance was offered to raising the normal leg, great opposition was developed in the alleged paretic leg.

In two cases of malingering, on this being explained to the patient, further attempt at fraud was abandoned, crutches given up, and a normal gait resumed.—C. F. Hoover, in *Jour. A. M. A.* for Aug. 29th, 1908.

**Tabes Associated With Trophic Changes Suggesting Acromegaly.**—H. B., white, a stonecutter, of negative family history, had had syphilis 12 years before.

Six years previously had had shooting pains in legs, and numbness in both feet. He was ataxic in station, gait, and arms. Rombergism present. Pupils reacted to light.

Later, trophic changes were very marked; hands and wrists became enlarged (ulna, metacarpals, and phalanges). Chin was enlarged, nose prominent, as also zygomatic arches and occipital protuberance

The study of the case and the result of autopsy led the author to remark: "It is not improbable that the changes in the pituitary body bear some relation to the bony changes. The thought suggests itself that perhaps in cases of tabes generally, where there are marked trophic changes in the bones, there are also changes of the pituitary body, and it may be wise to examine the pituitary body, and the other ductless glands in such cases. The internal secretions are probably destined to play an increasing role not only in general pathology, but also in nervous pathology. Perhaps we have here a hint also for future study in other affections.—F. X. Dercum, M. D., in *Jour. Nerv. and Ment. Dis.*, Aug., 1908.

## OPHTHALMOLOGY.

**Conducted by**

W. R. PARKER, M. D.

**Remarks on Iritis, with Special Reference to Gonorrhoeal Iritis.**—W. M. BEAUMONT, Surgeon Bath Eye Infirmary gives an historical sketch of iritis, stating with what reluctance iritis was acknowledged as a morbid entity. Rheumatic iritis was not recognized by John Hunter (1793), and he even doubted the existence of syphilitic iritis. Specific iritis was, however, described by Schmidt in 1801, although it is not mentioned by Scarpa in 1818. Sir Ashley Cooper writes, "Inflammation of the Iris, or as it has been lately called Iritis." He had doubts whether the iritis was due to the syphilis or to the mercury, and Travers tells of a primary inflammation of the iris—"as, for example, from syphilis or mercury, is distinguished from the secondary, or that by extension from the conjunctiva, by the more sparing vascularity of the conjunctiva, etc."

Gonorrheal iritis was recognized by Brodie (1818). A full report of the case is given. Ashley Cooper, recognized gonorrheal rheumatism, and MacKenzie was acquainted with gonorrheal iritis. He says, "That the urethral discharge in gonorrhoea is productive, through the medium of the constitution, of synovitis and iritis has generally appeared so improbable that the fact has been very slowly admitted by medical practitioners."

The author states "that patients who have been observed to suffer from gonorrhoeal synovitis and iritis have generally been young men of scrofulous constitutions, who lived hard and were careless of exposure to cold. Each time the patient catches gonorrhoea he is liable to an attack of synovitis or iritis, or suffers first from the one and then from the other. In some cases there has been no new gonorrhoea, although a second or a third attack of inflammation has affected the joints or the eye. Overexertion of sight has sometimes produced a new attack of severe gonorrhoeal iritis."

MacKenzie gives details of a case of gonorrhoeal iritis and arthritis with frequent attacks spreading over a period of seven years.

The interval which usually occurs between the gonorrhea and the iritis, according to the author, probably explains the fact that the former as a progenitor of the latter is frequently overlooked. As a consequence, "the iritis is fathered by chronic rheumatism or some other putative parent." Moreover, he says these secondary symptoms of gonorrhea are exceptional and therefore unexpected and overlooked. In syphilis the secondary symptoms are anticipated because they usually occur. Most modern teachers hold that gonorrheal iritis is rare. Fuchs says it develops in those cases in which gonorrhea has given rise to a general infection. This latter runs a course similar to that of acute articular rheumatism." The author next speaks of the rareness of the association of acute rheumatism and iritis, quoting Hutchinson, who says, "Iritis in conjunction with rheumatic fever of the ordinary form is almost unknown, and even in cases in which patients suffer from repeated attacks, as is sometimes seen, the eyes usually remain free. So soon, however, as changes of type occur, the disease showing a tendency to attack the smaller joints, or to affect only single joints, or to pass into the chronic form, then we get the liability on the part of the eye to suffer."

Some authors question the association of iritis with rheumatism pure and simple, or at least consider it a rare causative factor.

The author quotes from a paper written in 1900, by Mr. John Griffith, who reported a series of cases of gonorrheal iritis, all males, in which the iritis did not follow the gonorrhea until after the expiring of from four to fifteen years. He believed that iritis was not only liable to present itself as a complication, but also as a sequel of gonorrhea, and was doubtful about the existence of a true rheumatic iritis. The author, who has a large experience with rheumatic patients at Bath, also believes that rheumatism is rarely, if ever, a cause of iritis—many of the so-called rheumatic cases being due to gonorrhea. In twenty years he has seen 21 cases of iritis in rheumatic patients. During this period 17,197 cases were admitted for rheumatism and rheumatorial arthritis—54.75 per cent men, 45.25 women. Sixteen of the 21 cases gave a history of gonorrhea. Not one of the 5,304 cases treated for rheumatorial arthritis suffered an attack of iritis, although 3.61 per cent of 83 cases who were examined with the help of a mydriatic showed signs of old iritis. The absence of a history of syphilis is explained by the fact that very few patients go to Bath for treatment of that disease. Not one case of iritis occurred in the 2,159 cases of gout treated in this period of 20 years.

In conclusion the author says, "the list of cases shows at least the frequency of what I venture to call the syndrome—gonorrhea, arthritis, iritis, the first complicating the others, or, it may be, preceding them more or less remotely. After due allowance for the circumstance that patients suffering from other forms or iritis less often come to Bath, I think it is fair to surmise that gonorrheal iritis is much commoner than some authorities are inclined to allow. The connection of iritis with rheumatorial arthritis is less clear, and I leave it to others to say whether there is, in the first place, any connection whatever, and if so, in the second place, whether the iritis is the result of the rheumatorial arthritis or whether it and the arthritis are both the offspring of some common ancestor."—*British Medical Journal*, July 18, 1908.

## ORTHOPEDIC SURGERY.

**Conducted by**

WILLIAM E. BLODGETT, M. D.

**A Consideration of the Round or Stoop Shoulder Deformity.**—DR. GOLDTHWAIT concludes his paper with the following remarks on treatment: The treatment of round shoulders consists of such measures as make possible the correction of the malposition, with the removal, insofar as is possible, of such elements as would tend to favor the return of the deformity.

In young children, beginning with the common well-poised infant, preventive treatment only is indicated, and this consists wholly in the proper adjustment of the clothing so that the support is put upon the base of the neck instead of upon the tip of the shoulder as is commonly done. If this rule is observed, the shoulder position of the child will not be unlike the erect shoulder of the infant, unless sickness or some other cause produces abnormal weakness of the muscles with resulting imperfect support.

With the young child with whom the shoulders have already become drooped, the readjustment of the clothing is the first requisite, so that the weight is supported in such a way that undue strain does not result. For this the underwaist, which is for the present probably the best mode of attaching the clothing, should be carefully fitted, so that instead of having the shoulder straps placed in such a way that all of the drag is received upon the tip of the shoulder, together with the forward pull of the cross-straps as the waists are commonly made, should be cut high in the neck at the back so that the drag comes on the upper part of the shoulder close to the neck and the outer part of the shoulders is entirely left free. To accomplish this the waist should open in front, and this part should be cut so as to be quite full and make no compression over the chest. The neck in front can be cut low if this is desired, and the cross-straps upon which the chief drag comes should cross over the shoulders high up near the neck and then extend down to the hip on the same side, crossing the upper thorax well to the outside so that in the pull the shoulder is forced back and the minimum amount of pressure upon the thorax is exerted. In the back the waist should be cut high in the neck and should be fitted so as to be quite flat, not loose, as the front should be. The cross-straps should pass over the shoulder from the front near the base of the neck and then over to the other side, crossing the opposite strap like suspenders. These straps at the back join at the sides the straps after they have extended down the front, and at the point of their attachment at the side the buttons for the stocking straps and the heavier clothing should be fastened.

In the young children this adjustment of the clothing with good care and ordinary exercise is usually enough to bring about the restoration of the proper poise of both shoulders and trunk.

If the condition is more marked or has existed for so long that the posterior muscles have been weakened by the continued strain, not only should the support of the clothing be properly arranged, but a brace of some form should be used to hold the body erect and the shoulders back. Such a brace is naturally for temporary use and should be worn only until the position has been satisfactorily corrected and until the proper measures have resulted in bringing the muscles up to their proper tone. If the scapulae have not become fixed, a brace should not be required for more than three or four months, and during that time special exercises should be used in order to strengthen the muscles which are involved in holding the body erect, so that when the brace is discarded there will be no tendency to relapse.

In case braces become necessary, anything that holds the body erect and the shoulders back will be satisfactory; provided the thoracic movements are not interfered with.

In case the scapulae have become flexed, i. e., bend with marked forward concavity, so that because of this the correct position of the shoulders cannot be obtained by simple means, the treatment naturally consists in the correction of this mechanical feature.

With patients of fifteen years of age or less correction without operation is usually possible and the time required for the use of apparatus will naturally depend upon the character of the bones. If the scapulae are considerably flexed, and ossification is well advanced, removal of the upper flexed portion of the scapulae by open operation will be necessary to allow the scapulae to slip back into their normal position.—*American Journal of Orthopedic Surgery,* April, 1908.